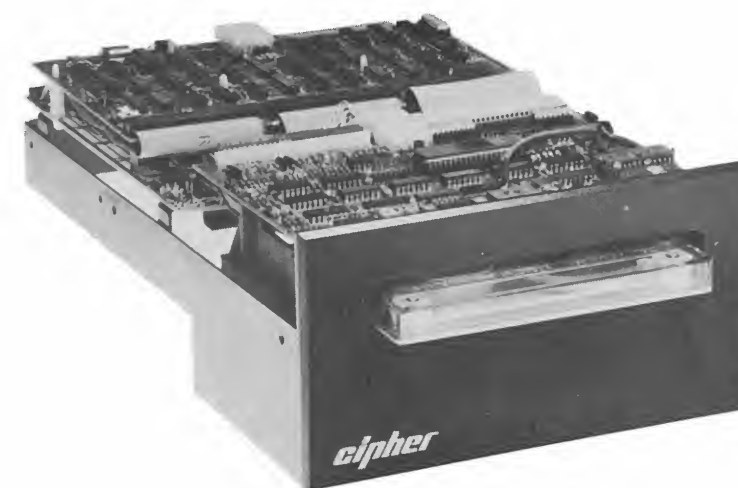


cipher[®]
data products, inc.

Quarterback[™]
1/4-Inch Cartridge Tape Drive
Engineering Drawing Package

Volume 2





QuarterbackTM
1/4-Inch Cartridge Tape Drive
Engineering Drawing Package

Volume 2

RECORD OF REVISIONS

Revision	Description	Date
A	Original Publication	5/82
B	Updated all sections, deleted Section 4. Revised per ACN 2783 and 31583.	12/83

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SECTION I

LOGIC SCHEMATICS

0795

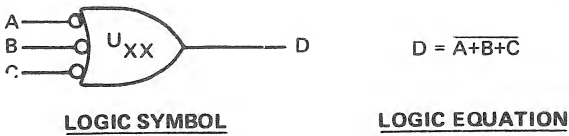


Figure I-1. Logic Symbol Example

I.1 INTRODUCTION

This volume contains all data essential to understand the logic functions of the Quarterback tape drive, as described in Volume 1. The information is presented in the following manner:

- Section 1 Logic Schematics
- Section 2 Assembly Drawings
- Section 3 Master Parts List

I.2 RELATED DOCUMENTS

To enhance user knowledge of the Quarterback tape drive, the following related documents are available:

- Product Description207102-001
- Maintenance Manual (Volume 1)207100-001
- Theory of Operation (Volume 3)207100-003

I.3 LOGIC DEFINITIONS AND SYMBOLOGY

In several portions of this documentation, primarily Volume 3, and in this Engineering Drawing Package, logic symbols are used to represent certain logical functions or integrated circuit elements. The accepted integrated circuit manufacturer's industry-standard symbols are used here.

Since DTL and TTL logic is being employed, it is of the typical inverting type that use NAND-NOR elements rather than AND-OR devices.

In the logic schematics, the input/output lines to each device are shown for the true (active) state of the function. A state indicator, shown as a small circle at the input or output of a device, signifies that, if that line is in the true state, it is at a 0-Volt potential (low). Lack of a state indicator signifies that, if that line is in the true state, it is at +5 Volts (high). An example of a logic symbol with definitions is shown in Figure I-1. The symbol depicts a logical NOR element which represents that output D is at +5 Volts if either input, A, B or C is at 0-Volt.

This figure shows a logical NOR element that says D is at +5 Volts (true state) if any one, or any combination of A, B, or C is at zero Volt. Typically, the reference designator of the particular chip in the assembly is shown within the symbol, and the corresponding integrated circuit (IC) pin numbers are shown on the lines external to the symbol. The numbers within the arrowheads on the logic schematics indicate the source or destination of the related signal by logic schematic page number. An arrowhead placed adjacent to a signal line indicates a connection at that point.

I.4 INTEGRATED CIRCUIT REFERENCE DATA

The one-shot produces a positive-going pulse at the "1" output and a negative-going pulse at the "0" output, and these are initiated at the time the input pulse makes a transition to its true state. The flip-flops are of the J-K type and have the input/output functions listed in Table I-1. Tables I-2 and I-3 are truth tables applicable to these devices.

Table I-1. Flip-Flop I/O Functions

Designation	Function
J	Synchronous set input
K	Synchronous reset input
T	Clock input
S _D	Direct set input
C _D	Direct clear (or Reset) input
1	Set output
0	Reset output

Table I-2. Truth Table for Synchronous Operation

Before Clocks				After Clock	
Outputs		Inputs		Outputs	
I	0	J	K	I	0
L	H	L	X	L	H
L	H	H	X	H	L
H	L	X	L	H	L
H	L	X	H	L	H

Table I-3. Truth Table for Asynchronous Operation

Inputs		Outputs	
SD	CD	I	0
L	L	H	H
L	H	H	L
H	L	L	L
H	H	Synchronous Operation	H




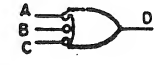
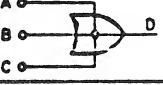
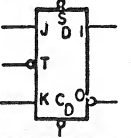
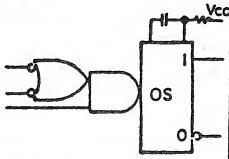
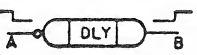
I.5 LOGIC SCHEMATICS

The following listed logic schematics are provided:

	Dwg. No.
Schematic, Main PWB . . . . .	.207002-200
Schematic, Controller PWB . . . . .	.207005-200
Schematic, Microcomputer Expander PWB . . . . .	.207011-200
Schematic, Motor Driver PWB . . . . .	.207017-200
Schematic, Main PWB . . . . .	.207066-200
Schematic, Motor Driver PWB . . . . .	.207069-200
Schematic, Motor Driver PWB . . . . .	.207076-200

Table I-4 shows all the logic symbols used in this manual with their corresponding names and logical equations. The equations shown are defined by the true level of the input signal.

Table I-4. Logic Symbols

SYMBOL	NAME	LOGICAL EQUATION
	NEGATIVE INVERTER	$B = \overline{A}$
	POSITIVE INVERTER	$B = \overline{A}$
	POSITIVE NAND GATE	$D = \overline{ABC}$
	NEGATIVE NOR GATE	$D = \overline{A+B+C}$
	NEGATIVE WIRED OR GATE	$D = A+B+C$
	FLIP-FLOP (J-K)	SEE TRUTH TABLE
	ONE-SHOT	SEE EXPLANATION
	TIME DELAY NETWORK	$B = \overline{A \cdot [DLY]}$

NOTES:

- CASE - 14 Pin Dip, Dimensions Per Spec. Dwg. No. 124000-001
- MATERIAL - Case - PLASTIC Leads - Plated (Gold, Tin or Bright Solder Dipped)
- ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.	COMMENTS
AMD	AM9601PC	
FAIRCHILD	F9601PC	01d P/N U6A960159X
ITT SEMI	ITT9601-N	
NATIONAL SEMI	DM9601N	
RAYTHEON	RF9601N	
STEWART WARNER	SW9601M	

100090-001

I.C., RETRIGGERABLE MONOSTABLE MULTIVIBRATOR (9601)

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APP.	DO NOT SCALE THIS DRAWING	SHEET
G	ECO 12325	Kam	7/13/82				1 of 1
F	ECO 12296	Jax	6/14/82				
E	ECO 10237	H.S.	4/17/80				
D	NEW FORMAT	A	7/24/77				

FORM 495 (12/76)

100234-000

NOTES:

- CASE: 16 Pin Plastic DIP Per CDP Spec. Dwg. No. 124000-002
- ELECTRICAL: Per applicable vendor data sheet

VENDOR	VENDOR PART NO.
AMD	AM9602PC
FAIRCHILD	9602PC
NATIONAL	DM8602N
SIGNETICS	N9602N

100234-001 - STANDARD PART
100234-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000

100234-XXX

I.C., MONOSTABLE MULTIVIBRATOR DUAL RETRIGGERABLE (9602)

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APP.	DO NOT SCALE THIS DRAWING	SHEET
D	ADD -101		7/11/77				1 of 1
C	CRP 8563		7/11/77				
E	ECO 12954		7/11/77				

FORM 201 (R. 8/77)

100331

NOTES:

- CASE: 14 Pin Plastic DIP Per CDP Spec. Dwg. No. 124000-001
- ELECTRICAL: Per applicable vendor data sheet

VENDOR	VENDOR PART NO.
TEXAS INST.	SN7406N
SIGNETICS	N7406A
MOTOROLA	MC7406P
FAIRCHILD	9N06P
NATIONAL SEMI.	DM7406N

100331-001 - STANDARD PART
100331-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000

100331-XXX

I.C., HEX INVERTER BUFFER, OC (7406)

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APP.	DO NOT SCALE THIS DRAWING	SHEET
B	ADD -101		7/11/77				1 of 1

FORM 495 (12/76)

100345

Integrated Circuit, Phase-Frequency Detector

Motorola P/N MC4044P

100345-001

I.C., INTEGRATED CIRCUIT, PHASE FREQUENCY DETECTOR

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APP.	DO NOT SCALE THIS DRAWING	SHEET
A	Manufacturing Release		7/14/77				1 of 1

FORM 201 (R. 8/77)

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101022-000

INTEGRATED CIRCUIT
VOLTAGE COMPARATOR, 8 PIN
DUAL-IN-LINE PLASTIC PACKAGE
OPERATING TEMPERATURE RANGE 0 TO 70°C

NATIONAL SEMICONDUCTOR - P/N LM311N
MICRO SYSTEM INTERNATIONAL (MIL) - P/N LM311S
SILICON GENERAL - P/N SG311M
MOTOROLA - P/N MLM 311P1
INTERSIL - LM311N
TEXAS INST. - LM311P (FORMERLY SN72311P)
AMD - AM311N
FAIRCHILD - μ A311TC

1

2

3

4

5

6

7

8

GND.

INPUT

INPUT

V-

V+

OUTPUT

BALANCE STROBE

BALANCE

TOP VIEW

REV

DESCRIPTION

DATE

APP'D

DO NOT SCALE DRAWING

TOLERANCES

MODEL

NEXT ASSY

DRAWN

CHECK

APPR

CODE

IDENT

SHEET

OF

1

101022-001

INTEGRATED CIRCUIT, VOLTAGE COMPARATOR (311)

109

101022-000

52465

1

1

FORM 201 (R 1-79)

BISHOP GRAPHICS/ACCUPRESS

REORDER NO. A-5624

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101031-000

INTEGRATED CIRCUIT,
DUAL PERIPHERAL POSITIVE NAND DRIVER
DUAL-IN-LINE PLASTIC PACKAGE, 8 PIN

VENDOR	PART NO.
Texas Instruments	SN75452P
National	DS75452N
Motorola	MC75452P
Signetics	N75452B
Fairchild	75452BTC

101031-001 STANDARD PART
101031-101 BURN-IN IN ACCORDANCE WITH CDP SPEC NO. 190000.

REV

DESCRIPTION

DATE

APP'D

DO NOT SCALE DRAWING

TOLERANCES

MODEL

NEXT ASSY

DRAWN

CHECK

APPR

CODE

IDENT

SHEET

OF

1

101031-XXX SEE TABULATION

INTEGRATED CIRCUIT, DUAL PERIPHERAL POSITIVE NAND DRIVER

109

101031-000

52465

1

1

FORM 201 (R 1-79)

BISHOP GRAPHICS/ACCUPRESS

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101032-000

NOTES:
1. CASE - 14 PIN DIP PER SPEC DWG. NO. 124000-001
2. ELECTRICAL - PER APPLICABLE VENDOR DATA SHEET.

VENDOR	VENDOR PART NO.
SIGNETICS	NE592N
AMD	AM592PC
INTERSIL	NE592N
MOTOROLA	NE592N

1

2

3

4

5

6

7

8

9

10

11

12

13

14

INPUT 2

NC

G 2B GAIN SELECT

G 1B GAIN SELECT

V -

NC

OUTPUT 2

INPUT 1

NC

G 2A GAIN SELECT

G 1A GAIN SELECT

V +

NC

OUTPUT 1

REV

DESCRIPTION

DATE

APP'D

DO NOT SCALE DRAWING

TOLERANCES

MODEL

NEXT ASSY

DRAWN

CHECK

APPR

CODE

IDENT

SHEET

OF

1

101032-001

I.C., VIDEO AMPLIFIER, DIFFERENTIAL

109

101032-000

52465

1

1

FORM 201 (R 1-79)

BISHOP GRAPHICS/ACCUPRESS

REORDER NO. A-5624

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101139-000

NOTES
1. CASE: 8 Pin Plastic DIP Per CDP Spec Dwg. No. 124000-003
2. ELECTRICAL: Per applicable vendor data sheet

VENDOR	VENDOR PART NO.
TEXAS INSTRUMENTS	SN75451BP
MOTOROLA	MC75451P
NATIONAL SEMI	DS75451N

101139-001 - STANDARD PART
101139-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC NO. 190000

REV

DESCRIPTION

DATE

APP'D

DO NOT SCALE DRAWING

TOLERANCES

MODEL

NEXT ASSY

DRAWN

CHECK

APPR

CODE

IDENT

SHEET

OF

1

101139-001

I.C., DUAL PERIPHERAL POSITIVE AND DRIVER (75451)

109

101139-000

52465

1

1

FORM 201 (R 8/77)

BISHOP GRAPHICS/ACCUPRESS

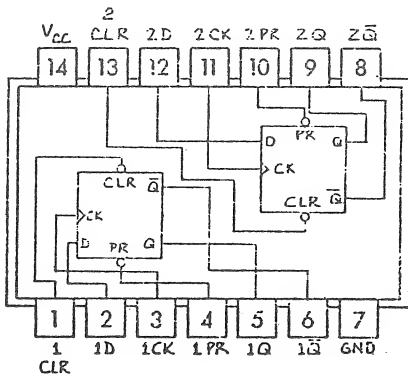
REORDER NO. A-5624

5b.

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. ELECTRICAL PARAMETERS - Per the Applicable
Vendor Data Sheets
3. OPERATING TEMP. - 0°C to +70°C

VENDOR	VENDOR PART NO.
TEXAS INST.	SN74S74N
SIGNETICS	N74S74N
NATIONAL	DM74S74N
FAIRCHILD	74S74PC



123023-001 - STANDARD PART

123023-101 - BURNED-IN IN ACCORDANCE
WITH CIPHER DATA SPEC
NO. 190000.

Part No. 123023-XXX SEE TABULATION

cipher
data products, inc.I.C., DUAL "D" TYPE FLIP-FLOP W/PRESET
AND CLEAR, SCHOTTKY (74S74)

CODE

109

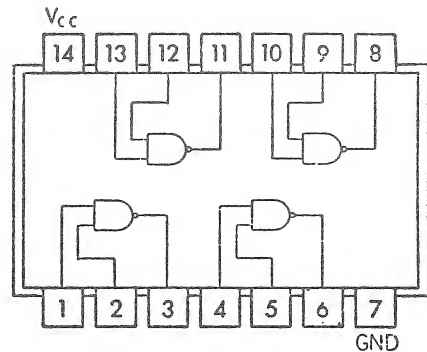
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B	CR/D 9562	CHK.	8/17/79	APPROVED	8/17/79	DRAWN	C. Kelberlau	7/22/77	CHECK	7/22/77	123023-000	C
A1	NEW FORMAT	CHK.	7/22/77	APPROVED	7/22/77	DRAWN	C. Kelberlau	7/22/77	CHECK	7/22/77	123023-000	C
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1					

FORM 495 (12/76)

NOTES:

1. PACKAGE - 14 Pin Plastic DIP Per
Spec. Dwg. No. 124000-001
2. ELECTRICAL PARAMETERS - Per the Applicable
Vendor Data Sheets
3. OPERATING TEMP. - 0°C to +70°C

VENDOR	PART NO.
Texas Inst.	SN74S00N
Fairchild	74S00PC



123028-001 - STANDARD PART

123028-101 - BURNED-IN IN ACCORDANCE
WITH CIPHER DATA SPEC
NO. 190000

Part No. 123028-XXX

cipher
data products, inc.I.C., SUPER HIGH SPEED QUAD
TWO INPUT NAND (74S00)

CODE

109

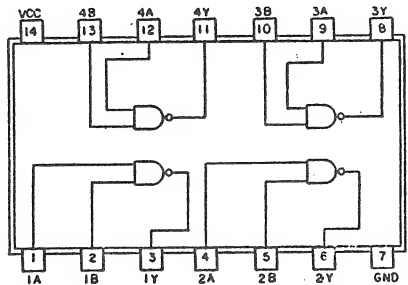
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C	CR/D 8227	CHK.	8/17/79	APPROVED	8/17/79	DRAWN	C. Kelberlau	7/22/77	CHECK	7/22/77	123028-000	D
B	CR/D 7949	CHK.	8/17/79	APPROVED	8/17/79	DRAWN	C. Kelberlau	7/22/77	CHECK	7/22/77	123028-000	D
A1	NEW FORMAT	CHK.	7/22/77	APPROVED	7/22/77	DRAWN	C. Kelberlau	7/22/77	CHECK	7/22/77	123028-000	D
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1					

FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright
Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable
Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS00 (N,J)
Signetics	N74LS00 (A,F)
Texas Inst.	SN74LS00 (N,J)
Fairchild	F74LS00 (P,D)C
Motorola	SN74LS00N

POSITIVE LOGIC:
Y = A+B123029-001 STANDARD PART
123029-101 BURNED-IN IN ACCORDANCE WITH CDP
SPEC. NO. 190000

Part No. 123029-XXX

cipher
data products, inc.I.C., QUAD 2-INPUT NAND GATE,
LOW-PWR. SCHOTTKY (74LS00)

CODE

109

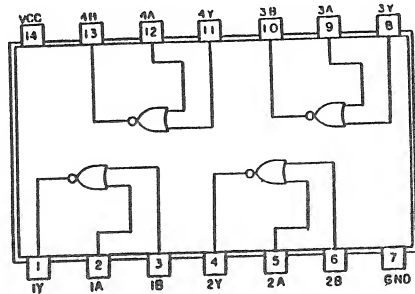
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A2	ADD -101	CHK.	7/2/77	APPROVED	7/2/77	DRAWN	C. Kelberlau	7/22/77	CHECK	7/22/77	123029-000	B
A1	NEW FORMAT	CHK.	7/22/77	APPROVED	7/22/77	DRAWN	C. Kelberlau	7/22/77	CHECK	7/22/77	123029-000	B
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1					

NOTES:

CASE: 14 Pin Plastic DIP Per Spec
Dwg. No 124000-001ELECTRICAL: Per the Applicable Vendor
Data Sheets.

VENDORS:	PART NUMBERS
NATIONAL	DM74LS02 (N,J)
SIGNETICS	N74LS02 (A,F)
TEXAS INST.	SN74LS02 (N,J)
FAIRCHILD	F74LS02 (P,D) C

123030-001 Standard Part

123030-101 Burned-In In Accordance With
CDP Spec, No. 190000POSITIVE LOGIC:
Y = A+B

PART NUMBER 123030-XXX

cipher
data products, inc.I.C., QUAD 2-INPUT NOR GATE,
LOW - PWR SCHOTTKY (74LS02)

CODE

109

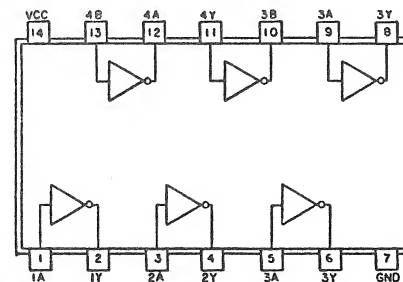
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A1	NEW FORMAT	CHK.	7/22/77	APPROVED	7/22/77	DRAWN	M.R. HOWARD	8/12	CHECK	8/15/77	123030	A2
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	DO NOT SCALE THIS DRAWING	SHEET 1 of 1					

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ANY PART DISCLOSED HEREIN WITHOUT THE
PRIOR WRITTEN PERMISSION OF THE
DATA PRODUCTS, INC.

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS04 (N,J)
Signetics	N74LS04 (A,F)
Texas Inst.	SN74LS04 (N,J)
Fairchild	F74LS04 (P,D)C



POSITIVE LOGIC:
Y = X

123031-001 - STANDARD PART
123031-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC NO. 190000

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Part No. 123031-XXX

cipher
data products, inc.

I.C., HEX INVERTER, LOW-PWR.
SCHOTTKY (74LS04)

CODE

109

B	CRIO 9562	SENSE	HR	8/17/77	9/17/77	CD	DRAWN	C. Kelberlau	7/21/77
A ₂	NEW FORMAT		OK	7/22/77		CD	CHECK	J. Watson	7/21/77
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.			Jess Kendrick	7/22/77

123031-000

B

REVISIONS

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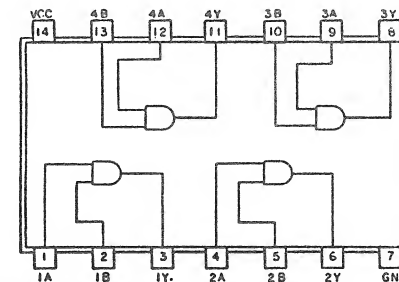
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS08 (N,J)
Signetics	N74LS08 (A,F)
Texas Inst.	SN74LS08 (N,J)
Fairchild	F74LS08 (D,P)C



POSITIVE LOGIC:
Y = AB

123032-001 Standard Part
123032-101 Burned-In in accordance with CDP Spec. No. 190000.

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Part No. 123032-XXX

cipher
data products, inc.

I.C., QUAD 2-INPUT AND GATE,
LOW-PWR. SCHOTTKY (74LS08)

CODE

109

B	CRIO 97451A M.L.	OK	7/20/77	11/11/80	CD	DRAWN	C. Kelberlau	7/22/77
A ₂	NEW FORMAT	OK	7/22/77		CD	CHECK	J. Watson	7/21/77
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.		Jess Kendrick	7/22/77

123032-000

B

REVISIONS

DO NOT SCALE THIS DRAWING

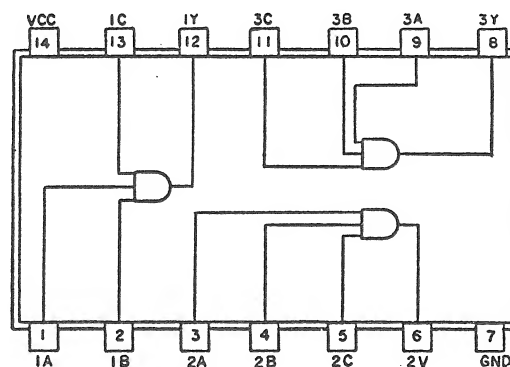
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS11 (N,J)
Signetics	N74LS11 (A,F)
Texas Inst.	SN74LS11 (N,J)
Fairchild	F74LS11 (D,P)C
MOTOROLA	SN74LS11N



POSITIVE LOGIC:
Y = ABC

123034-001 STANDARD PART
123034-101 BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000

Part No. 123034-XXX

cipher
data products, inc.

I.C., TRIPLE 3-INPUT AND GATE,
LOW-PWR. SCHOTTKY (74LS11)

CODE

109

B	ECO 13024	JAZ	11/30/83	11/30/83	CD	DRAWN	C. Kelberlau	7/21/77
A ₂	ADD -101	OK	7/21/77		CD	CHECK	J. Watson	7/21/77
A ₁	NEW FORMAT	OK	7/21/77		CD	APPR.	Jess Kendrick	7/21/77
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.			

123034-000

B

REVISIONS

DO NOT SCALE THIS DRAWING

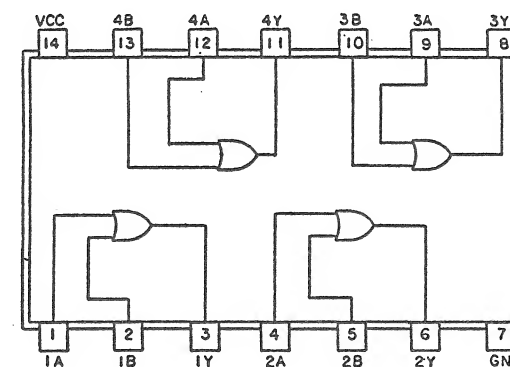
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable Vendor Data Sheets

VENDOR	PART NO.
National	DM74LS32 (N,J)
Signetics	N74LS32 (A,F)
Texas Inst.	SN74LS32 (N,J)
Fairchild	F74LS32 (D,P)C



POSITIVE LOGIC:
Y = A+B

123035-001 Standard Part
123035-101 Burned-In in accordance with CDP Spec. No. 190000.

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

Part No. 123035-XXX

cipher
data products, inc.

I.C., QUAD 2-INPUT OR GATE,
LOW-PWR. SCHOTTKY (74LS32)

CODE

109

B	CRIO 97451A M.L.	OK	7/20/77	11/11/80	CD	DRAWN	C. Kelberlau	7/21/77
A ₂	NEW FORMAT	OK	7/21/77		CD	CHECK	J. Watson	7/21/77
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.		Jess Kendrick	7/21/77

123035-000

B

REVISIONS

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

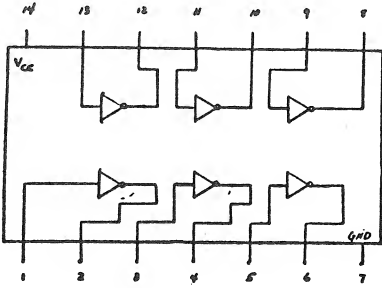
FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic DIP Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Ceramic or Plastic
Leads - Plated (Gold, Tin or Bright
Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the
Applicable Vendor Data Sheets

VENDOR	VENDOR PART NO.
Signetics	N74S04 (A,F)
Fairchild	F74S04 (P,D)C
National	DM74S04 (N,J)
Texas Inst.	SN74S04 (N,J)

123046-001 Standard Part
123046-101 Burned-In In Accordance With
CIP Spec. No. 190000



Part No. 123046-XXX

cipher
data products, inc.

I.C., HEX INVERTER, SCHOTTKY
(74S04)

CODE

109

DRAWN	C. Kelberlau	7/20/77
CHECK		
APPR.		

123046

1

REVISIONS

DO NOT SCALE
THIS DRAWING

SHEET 1 of 1

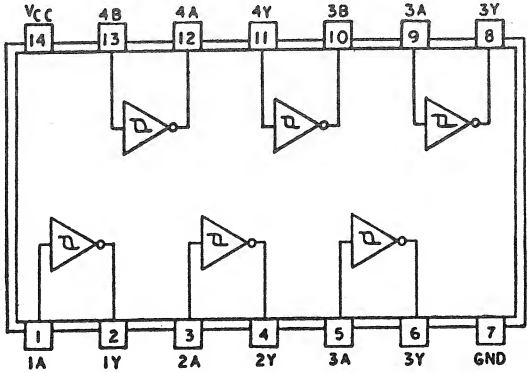
FORM 495 (12/76)

NOTES:

1. CASE - 14 Pin Plastic Dip Per Spec.
Dwg. No. 124000-001
2. MATERIAL -
Case - Plastic or ceramic
Leads - Plated (Gold, Tin, or Bright
Solder Dipped)
3. ELECTRICAL PARAMETERS - Per the Applicable
Vendor Data Sheets

VENDOR	VENDOR PART NO.
National	DM74LS14 (N,J)
Signetics	N74LS14 (A,F)
Texas Inst.	SN74LS14 (N,J)
Fairchild	F74LS14 (P,D)C

123047-001 - STANDARD PART
123047-101 - BURNED-IN IN ACCORDANCE WITH
CIP SPEC NO. 190000.



POSITIVE LOGIC:
Y = A

THIS DRAWING CONTAINS PROPRIETARY
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ANY PART DISCLOSED HEREIN WITHOUT THE
PRIOR WRITTEN PERMISSION OF THE CIPHER
DATA PRODUCTS, INC.

Part No. 123047-XXX

cipher
data products, inc.

I.C., HEX INVERTER, SCHMITT-TRIGGER, LOW-PWR
SCHOTTKY (74LS14)

CODE

109

DRAWN	C. Kelberlau	7/20/77
CHECK		
APPR.		

123047

A2

REVISIONS

DO NOT SCALE
THIS DRAWING

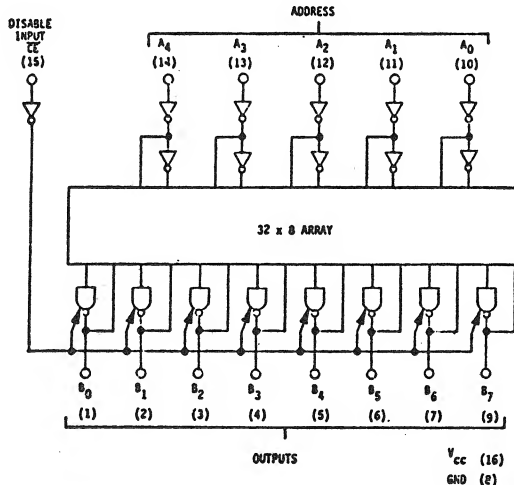
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

1. CASE - 16 Pin Plastic DIP Per Spec:
Dwg. No. 124000-002
2. MATERIAL: Case - Plastic or Ceramic
Leads - Plated (Gold, Tin or Bright
Solder Dipped)
3. ELECTRICAL CHARACTERISTICS - Per the Applicable
Vendor Data Sheets
4. The Integrated Circuit described in this spec.
must be further modified by programming prior
to use.

VENDOR	VENDOR PART NO.
SIGNETICS	N82S123B or N82S123F
INTERSIL	IM5610CPE or IM5610CJE



NOTE: Outputs are disabled (at high
impedance state) when CE is
at logical high state.

Part No. 123056-001

cipher
data products, inc.

I.C., ROM-PROGRAMMABLE, 256 BIT TRI-STATE OUTPUTS
123056

CODE

109

DRAWN	C. Kelberlau	7/20/77
CHECK		
APPR.		

123056

A1

REVISIONS

DO NOT SCALE
THIS DRAWING

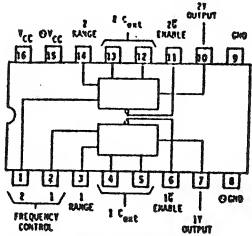
SHEET 1 of 1

FORM 495 (12/76)

NOTES:

- CASE: 16 Pin Plastic DIP Per Spec
Dwg. No. 124000-002
- ELECTRICAL: Per The Applicable Vendor
Data Sheets.

VENDOR	PART NUMBER
TEXAS INSTRUMENTS	SN74S124N or SN74S124J



LOGIC: OUTPUT (Y) IS ENABLED WHEN ENABLE INPUT (E) IS LOW
OUTPUT (Y) IS DISABLED HIGH WHEN ENABLE INPUT (E) IS HIGH

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ANY PART DISCLOSED HEREIN WITHOUT THE
PRIOR WRITTEN PERMISSION OF THE CIPHER
DATA PRODUCTS, INC.

PART NUMBER 123069-001

cipher
data products, inc.

INTEGRATED CIRCUIT DUAL VOLTAGE-CONTROLLED
OSCILLATORS, SCHOTTKY - 74S124

CODE

109

DRAWN	M.R. HOWARD	8/12
CHECK		
APPR.		

123069

A1

REVISIONS

DO NOT SCALE
THIS DRAWING

SHEET 1 of 1

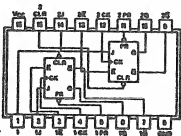
FORM 495 (12/76)

NOTES:

- CASE - 16 Pin Plastic Dip Per Spec Dwg. No. 124000-002
- ELECTRICAL - Per Applicable Vendor Data Sheets

VENDOR	PART NUMBER
TEXAS INST.	SN74LS109N
AMD	AM74LS109PC
FAIRCHILD	74LS109PC
NATIONAL	DM74LS109N
SIGNETICS	N74LS109B
MOTOROLA	SN74LS109AN

FUNCTION TABLE									
INPUTS					OUTPUTS				
PRESET	CLEAR	CLOCK	J	R	Q	Q	Q	Q	Q
L	H	X	X	X	M	L			
H	L	X	X	X	L	H			
L	L	X	X	X	M	H			
H	H	L	L	L	L	H			
H	H	L	L	L	L	H			
H	H	L	L	L	L	H			
H	H	L	L	L	L	H			
H	H	L	L	L	L	H			
H	H	L	L	L	L	H			



123084-001 - STANDARD PART
123084-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC. NO. 190000.

PART NUMBER 123084-XXX

cipher
data products, inc.

I.C., DUAL J-K POSITIVE EDGE TRIGGERED FLIP-FLOP, LOW PWR SCHOTTKY (74LS109)

CODE

109

C	ECO 13022	Jax	11/28/83	11/30/83	
B	CRD 9562	JEHR	9/17/79		
A1	NEW FORMAT		8/1/77		
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.

DRAWN	M.R. HOWARD	8/11
CHECK	D. WATSON	8/11/77
APPR.	Jess Kendrick	8/11/77

123084-000

C

REVISIONS

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SHEET 1 of 1

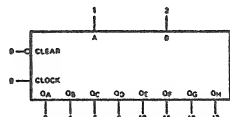
FORM 495 (12/76)

NOTES:

- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
- PACKAGE: 14 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-001

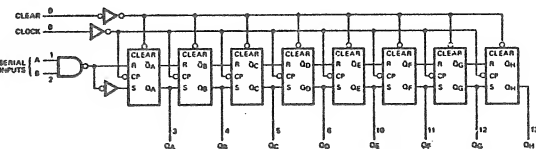
CIPHER PART NO.	VENDOR	VENDOR PART NO.
123086-001	TEXAS INSTRUMENTS FAIRCHILD NATIONAL SIGNETICS AMD	SN74LS164N 74LS164PC DM74LS164N N74LS164A AM74LS164PC
123086-002	AMD	AM25LS164PC

LOGIC SYMBOL



VCC - Pin 14
GND - Pin 7

LOGIC DIAGRAM



PART NUMBER 123086-XXX (SEE TABULATION)

DO NOT SCALE DRAWING

TOLERANCES
.XX±
.XXX±

MODEL
NEXT ASSY

cipher
data products, inc.

I.C., 8-BIT SERIAL-IN, PARALLEL OUT SHIFT REGISTER (25/74LS164)

CODE

109

DRAWN M.R. HOWARD 8/15

CHECK T. WATSON 8-15-77

APPR JESS KENDRICK 8-15-77

123086-000

C

CODE IDENT 52465

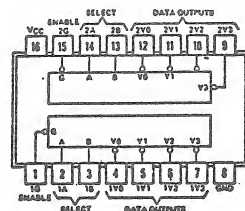
SHEET 1 of 1

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NOTES:

- CASE: 16 Pin Plastic Dip Per Spec. Dwg. No. 124000-002
- ELECTRICAL - Per Applicable Vendor Data Sheets.

VENDOR	PART NUMBER
TEXAS INST.	SN74LS139N
AMD	AM74LS139PC
FAIRCHILD	74LS139PC
NATIONAL	DM74LS139N
SIGNETICS	N74LS139B
MOTOROLA	SN74LS139N



123085-001 Standard Part
123085-101 Burned-In in accordance with CDP Spec. No. 190000.

PART NO. 123085-XXX

cipher
data products, inc.

I.C., DUAL 2-TO-4 LINE DECODER DUAL 1-TO-4 LINE DEMULTIPLEXER LOW PWR SCHOTTKY (74LS139)

CODE

109

C	ECO 13024	Jax	11/28/83	11/30/83	
B	CRD 9745/A	M.L.	11/10/80	11/11/80	
A1	NEW FORMAT		8/15/77		
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.

DRAWN	M.R. HOWARD	8/10
CHECK	D. WATSON	8/15
APPR.	Jess Kendrick	8/15/77

123085-000

C

REVISIONS

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SHEET 1 of 1

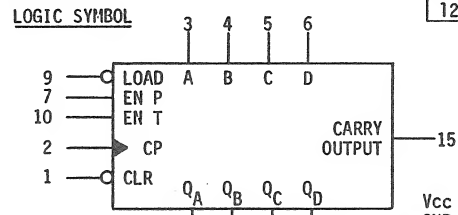
FORM 495 (12/76)

NOTES:

- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
- PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

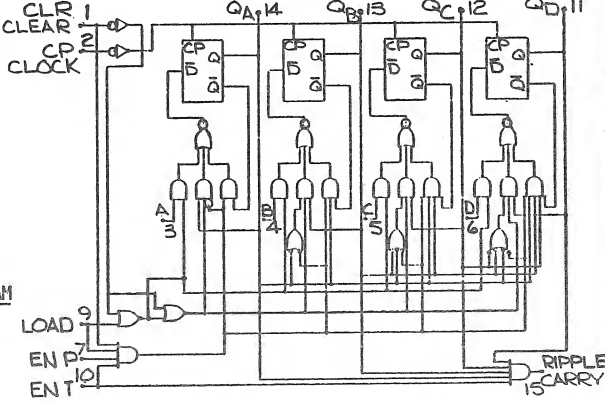
CIPHER PART NO.	VENDOR	VENDOR PART NO.
123090-001	FAIRCHILD AMD NATIONAL MOTOROLA SIGNETICS T.I.	74LS163PC AM74LS163APC DM74LS163N SN74LS163AN N74LS163AN SN74LS163AN
123090-002	AMD	AM25LS163APC

LOGIC SYMBOL



123090-000

VCC = PIN 16
GND = PIN 8



LOGIC DIAGRAM

123090-0XX STANDARD PART

123090-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

PART NUMBER 123090-XXX (SEE TABULATION)

DO NOT SCALE DRAWING

TOLERANCES
.XX±
.XXX±

MODEL
NEXT ASSY

cipher
data products, inc.

I.C., 4-BIT BINARY COUNTER WITH SYNCHRONOUS RESET (25/74LS163)

CODE

109

DRAWN BAKER 1/27/82

CHECK Sam Matheson 2/5/82

APPR Jess Kendrick 2/23/82

123090-000

D

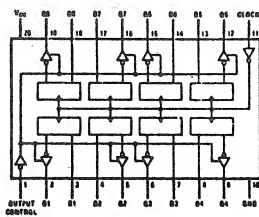
CODE IDENT 52465

SHEET 1 of 1

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1. CASE - 20 Pin Plastic Dip
2. ELECTRICAL - Per applicable vendor data sheets

VENDOR	VENDOR PART NO.
AMD	AM74LS374PC
NATIONAL	DM74LS374N
FAIRCHILD	74LS374PC
TI	SN74LS374N
SIGNETICS	N74LS374N
MMI	SN74LS374N



123091-001 Standard Part
123091-101 Burned-In in accordance with
CDP Spec. No. 190000.

cipher
data products, inc.

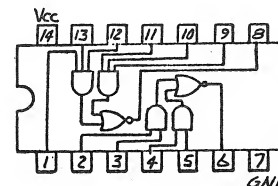
OCTAL D FLIP-FLOPS, TRI-STATE
LOW PWR SCHOTTKY (74LS374)

C					E.C.D. 10096		H.L.		3/4/80		3/4/80		3/4/80		LOW PWR SCHUTTING (74L3374)		109					
B					3/4/80		H.L.		3/4/80		3/4/80		3/4/80		DRAWN		C: Kelberlau		1/12/77		C	
A ₂					3/4/80		H.L.		3/4/80		3/4/80		3/4/80		CHECK		G. Kelberlau		1/12/77		123091-000	
REV.					DESCRIPTION					CHK.		DATE		APPROVED		APPR.		1/12/77				
REVISIONS										DO NOT SCALE THIS DRAWING										SHEET 1 of 1		

FORM 495 (12/76)

1. CASE - 14 Pin Plastic Dip Per Spec.
Dwg. No. 124000-001
2. ELECTRICAL - Per Applicable Vendor
Data Sheets

VENDOR	VENDOR PART NUMBER
AMD	AM74LS51PC
FAIRCHILD	74LS51PC
NATIONAL	DM74LS51N
SIGNETICS	N74LS51A
T. I.	SN74LS51N



LOGIC/PIN CONFIGURATION:

cipher
data products, inc.

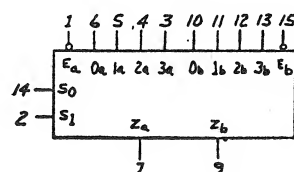
I.C., DUAL 2-WIDE 2-INPUT/3-INPUT AND-OR
INVERT GATE LOW PWR SCHOTTKY (74LS51)

					DRAWN	C. Kelberlau	7/6/77			123093	A
A ₂	NEW FORMAT	OK	7/6/77	☺	CHECK	gulation	7/6/77				
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.	Joe Kudrick	7/7/77				
REVISIONS					DO NOT SCALE THIS DRAWING			SHEET 1 of 1			

FORM 495 (12/76)

1. GASE - 16 Pin Plastic Dip Per Spec.
Dwg. No. 124000-002.
2. ELECTRICAL - Per Applicable Vendor
Data Sheets





VENDOR	VENDOR PART NO.
AMD	AM74LS153PC
FAIRCHILD	74LS153PC
NATIONAL	DM74LS153N
SIGNETICS	N74LS153B
T. I.	SN74LS153N



LOGIC/PIN CONFIGURATION

cipher
data products, inc.

DUAL 4-LINE TO 1-LINE DATA SELECTORS/
MULTIPLEXERS, LOW PWR SCHOTTKY (74LS153)

					DRAWN	C. Kelberlau	7/1/77	123095	A ₁
A ₁	NEW FORMAT		7/1/77		CHECK		7/1/77		
REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.		7/1/77		
REVISIONS					DO NOT SCALE THIS DRAWING			SHEET 1 of 1	

FORM 495 (12/76)

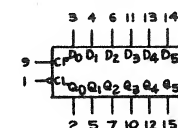
1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
2. PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

CIPHER PART NO.	VENDOR	VENDOR PART NO
123096-001	AMD FAIRCHILD NATIONAL SIGNETICS TEXAS INSTRUMENTS MOTOROLA AMD	AM74LS174PC 74LS174PC DM74LS174N N74LS174N SN74LS174N SN74LS174N AM25LS174PC
123096-002		

123096-0XX STANDARD PART

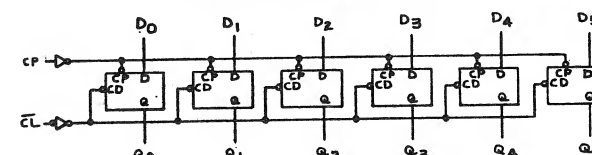
123096-1XX BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.

LOGIC SYMBOL
LS174




Vcc = PIN 15
GND = PIN 8

LOGIC DIAGRAM LS174



PART NUMBER: 123096-XXX (SEE TABULATION)

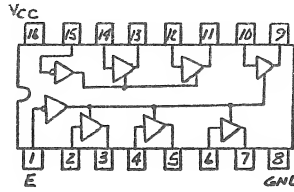
REV	DESCRIPTION	APP'D	<div style="display: flex; justify-content: space-between;"> <div> DO NOT SCALE DRAWING TOLERANCES .XX± .XXX± MODEL NEXT ASSY </div> <div>  </div> </div>		PART NUMBER	CODE
—	REV & REDRAWN		I.C., HEX D FLIP-FLOP WITH CLEAR (25/74LS174)		109	
ECO 12004	ECO 12004		DRAWN M.R. HOWARD 8/10 CHECK T. WATSON 9/10/71 APPR J. KENDRICK 8/10/77		123096-000	D
ECO 1202-1	ECO 1202-1		<small>THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.</small>		CODE IDENT 52485	SHEET 1 of 1

FORM 201 (R 11/80)

NOTES:

1. CASE - 14 Pin Plastic Dip Per Spec. Drawing No. 124000-002.
2. ELECTRICAL - Per Applicable Vendor Data Sheets

VENDOR	VENDOR PART NO.
AMD	AM74LS367PC
FAIRCHILD	74LS367PC
NATIONAL	DM74LS367N
SIGNETICS	N74LS367B
T. I.	SN74LS367N
Motorola	SN74LS367AH



LOGIC/PIN CONFIGURATION

123097-001 - STANDARD PART
123097-101 - BURNED-IN IN ACCORDANCE WITH CDP SPEC NO. 190000.

Part No. 123097-XXX

cipher
data products, inc.

HEX 3-STATE BUFFER, SEPARATE 2-BIT SECTIONS, LOW PMR SCHOTTKY (74LS367)

CODE
109

REV.	DESCRIPTION	CHK.	DATE	APPROVED	APPR.
B	CR/O 9562	JELSON	9/17/79	(S)	
A2	CR/O 9190	San J	9/11/79	(S)	
A3	NEW FORMAT	CA	1/1/77	(S)	

DRAWN	C. Kelberlau	1/1/77
CHECK	T. Watson	1/1/77
APPR.	Jess Kendrick	1/1/77

123097-000

B

REVISIONS

DO NOT SCALE THIS DRAWING

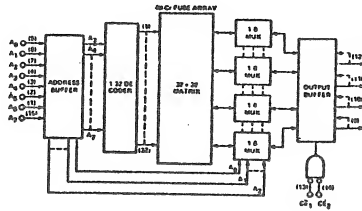
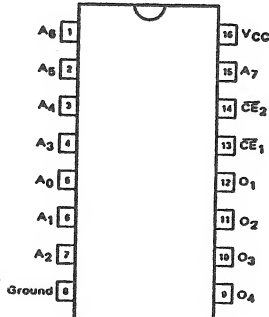
SHEET 1 of 1

FORM 496 (12/76)

NOTES:

1. CASE - 16 Pin Plastic or Ceramic Per Spec. Dwg., No. 124000-002.
2. MECHANICAL & ELECTRICAL - Per Applicable Vendor Data Sheet

VENDOR	VENDOR PART NO.
Signetics	N82S129N, N82S129F
Fairchild	93427PC, 93427DC
NATIONAL	DM74S287N



Part No. 123106-001

cipher
data products, inc.

I.C., 1024-BIT BIPOLAR PROGRAMMABLE ROM (256X4 PROM) WITH TRI-STATE OUTPUTS

CODE
109

E	ECO 12298	Jax	KAM	4/22/82	(S)
D	ECO 12136	W	KAM	1/24/82	(S)
C	CR/O 9834	NJ 1-7-80	OK	1/11/80	(S)
B	CR/O 9340			7/3/79	(S)
A1	CR/O - 8996	D. ULLOA	PC	1-13-75	2/19/79
A	MFG. RELEASE	CA		4/21/77	(S)

DRAWN	C. Kelberlau	4/21/77
CHECK	T. Watson	4/21/77
APPR.	Jess Kendrick	4/21/77

123106-000

E

REVISIONS

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

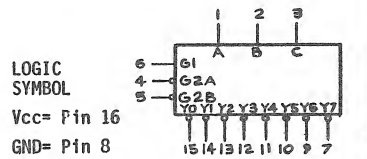
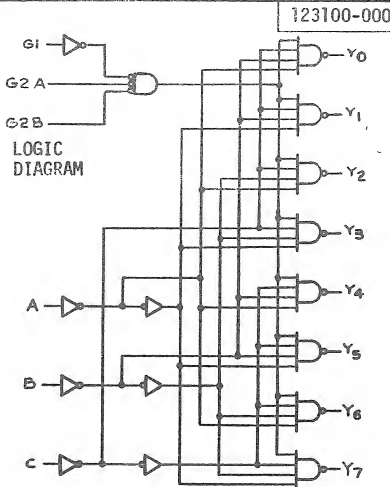
NOTES:

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET
2. PACKAGE: 16 PIN PLASTIC DIP PER CIPHER DATA PRODUCTS SPEC DWG. NO. 124000-002

CIPHER PART NO.	VENDOR	VENDOR PART NO.
123100-001	AMD	AM74LS138PC
123100-001	FAIRCHILD	74LS138PC
123100-001	NATIONAL	DM74LS138N
123100-001	SIGNETICS	N74LS138A
123100-001	TEXAS INST.	SN74LS138N
123100-002	AMD	AM25LS138PC

123100-0XX STANDARD PART

123100-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.



123100-XXX (SEE TABULATION)

cipher
data products, inc.

I.C., DECODER/DEMULTIPLEXER 3-LINE TO 8-LINE (25/74LS138)

CODE
109

REV	DESCRIPTION	CHK.	DATE	APPROVED	APPR.
C	ECO 12003	W	1/24/82	(S)	

DO NOT SCALE DRAWING
TOLERANCES
.XX±
.XXX±
ANGULAR
±
MODEL
NEXT
ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DRAWN	C. KELBERLAU	3/3/77
CHECK	T. WATSON	3/3/77
APPR	J. KENDRICK	3/3/77

123100-000

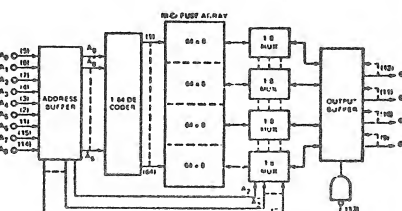
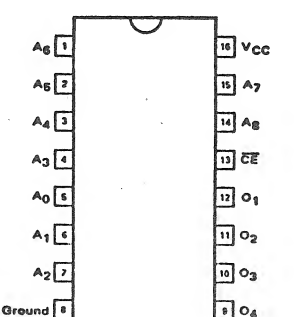
C

FORM 201 (R 11/80)

NOTES:

1. CASE - 16 Pin Plastic or Ceramic Per Spec Dwg. 124000-002.
2. ELECTRICAL & MECHANICAL - Per Applicable Vendor Data Sheet

VENDOR	VENDOR P/N
Signetics	N82S131N, N82S131F
Harris	HM1-7621-5, HM3-7621-5
Fairchild	93446PC, 93446DC
AMD	AM27S13DC
NATIONAL	DM74S571N



Part No. 123107-001

cipher
data products, inc.

I.C., 2048-BIT BIPOLAR PROGRAMMABLE ROM (512X4 PROM), WITH TRI-STATE OUTPUTS

CODE
109

C	ECO 12136	W	KAM	4/26/82	(S)
B	CR/O 9834	NJ 1-7-80	OK	1/11/80	(S)
A1	CR/O - 8996	D. ULLOA	PC	1-13-75	2/19/79
A	MFG. RELEASE	CA		4/21/77	(S)

DRAWN	C. Kelberlau	4/21/77
CHECK	T. Watson	4/21/77
APPR.	Jess Kendrick	4/21/77

123107-000

C

REVISIONS

DO NOT SCALE THIS DRAWING

SHEET 1 of 1

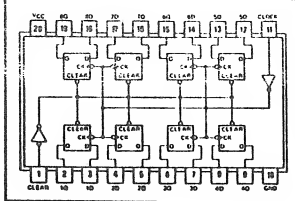
123152-000

NOTES

1. CASE: 20 Pin Plastic DIP Per Spec. Dwg. No. 124000-006

2. ELECTRICAL: Per Applicable Vendor Data Sheet

VENDOR	VENDOR P/N
TEXAS INST.	SN74LS273N
AMD	SN74LS273N
FAIRCHILD	74LS273PC



REV A MFG. REL. 8/22/78
ECO 123203 1/12/80

DO NOT SCALE DRAWING 3/4"

TOLERANCES .XX± ANGULAR .XXX±

MODEL I.C., OCTAL D-TYPE FLIP-FLOP WITH CLEAR (74LS273)

NEXT ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER DATA PRODUCTS, INC. AND MAY NOT BE WHOLLY OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DRAWN C. Kelberlau 3/27/78
CHECK 3/27/78
APPR Joe Kendrick 3/27/78

123152-000 B

CODE 109

SHEET 1 OF 1

123192

DESCRIPTION

GENERAL: 8-Bit CPU, ROM, RAM, I/O in single package. 2.5µsec and 5.0µsec versions. All instructions 1 or 2 cycles. Over 90 instructions: 70% Single Byte. 1K x 8 ROM/EPROM, 64 x 8 RAM, 27 I/O lines. Interval Timer/Event Counter, Expandable Memory and I/O. Compatible with 8000 series peripherals. Single level interrupt. Single 5V supply.

PACKAGE: 40 PIN Dual in Line.

ELECTRICAL: Per applicable vendor data sheet.

PIN CONFIGURATION

LOGIC SYMBOL

BLOCK DIAGRAM

VENDOR	VENDOR PART NO.
INTEL	8035

REV A MFG. REL. 8/22/78
ECO 123203 1/12/80

DO NOT SCALE DRAWING

TOLERANCES .XX± ANGULAR .XXX±

MODEL I.C., SINGLE COMPONENT 8-BIT MICRO COMPUTER (8035)

NEXT ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER DATA PRODUCTS, INC. AND MAY NOT BE WHOLLY OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DRAWN L. Hale 8-22-78
CHECK 8-22-78
APPR Joe Kendrick 8-23-78

123192 A

CODE 109

SHEET 1 OF 1

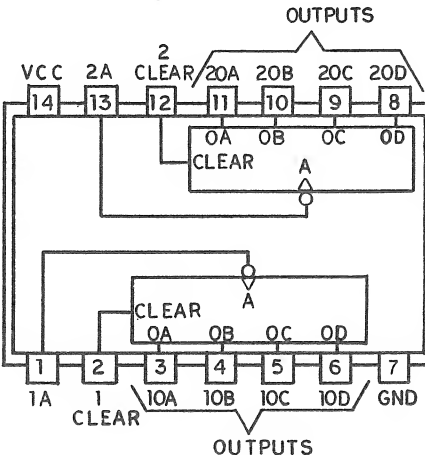
123203-000

NOTES

1. CASE- 14 PIN PLASTIC DIP PER SPEC. DWG. 124000-001.

2. ELECTRICAL- PER APPLICABLE VENDER DATA SHEET.

VENDER	VENDER PART NO.
TEXAS INST.	SN74LS393N
FAIRCHILD	74LS393PC
SIGNETICS	N74LS393N
MOTOROLA	SN74LS393N



REV A MFG. REL. 8/22/78
ECO 10891 3/26/80

DO NOT SCALE DRAWING

TOLERANCES .XX± ANGULAR .XXX±

MODEL I.C., DUAL 4 STAGE BINARY COUNTER (74LS393)

NEXT ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER DATA PRODUCTS, INC. AND MAY NOT BE WHOLLY OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DRAWN M. LeBelle 9-22-80
CHECK COMMISSION 9-26-80
APPR Joe Kendrick 9/26/80

123203-000 A

CODE 109

SHEET 1 OF 1

123231-000

NOTES:

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.

2. PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-002

VENDOR	VENDOR PART NO.
RCA MOTOROLA SGS	CD4502BE MC14502BCP HCF4502BE

123231-0XX STANDARD PART

123231-1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

CIRCUIT DIAGRAM

LOGIC DIAGRAM

TRUTH TABLE

REV A MFG. REL. 8/22/78
ECO 12300 3/26/80
ECO 12872 3/26/80

DO NOT SCALE DRAWING

TOLERANCES .XX± ANGULAR .XXX±

MODEL I.C., STROBED HEX INVERTER/BUFFER-CMOS (4502B)

NEXT ASSY

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLLY OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.

DRAWN T. LINDMAN 1-29-82
CHECK Ken Matheson 1/29/82
APPR Joe Kendrick 3/26/82

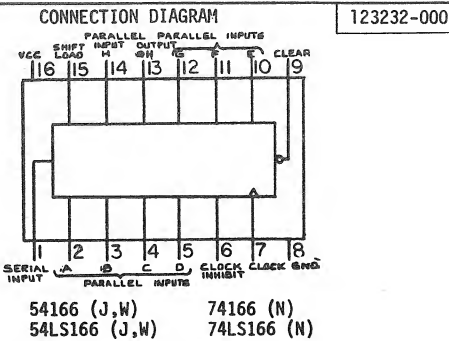
123231-000 C

CODE 109

SHEET 1 OF 1

2. PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC
DWG NO. 124000-002

Truth Table



Inputs						Internal Outputs		Output Q _n
Clear	Shift/Load	Clock Inhibit	Clock	Serial	Parallel A...M	Q _A	Q _B	
L	X	X	X	X	X	L	L	L
H	X	L	L	X	X	Q _{A0}	Q _{B0}	Q ₀₀
H	H	L	↑	X	a...h	a	b	h
H	H	L	↑	H	X	L	Q _{AN}	Q _{BN}
H	H	L	↑	L	X	L	Q _{AN}	Q _{BN}
H	X	H	↑	X	X	Q _{A0}	Q _{B0}	Q ₀₀

H = High Level (steady state), L = Low Level (steady state)
 X = Don't Care (any input, excluding transitions)
 \downarrow = Transition from low to high level
 a, \dots, n = The level of steady-state signal at inputs A through M , respectively
 Q_{A0}, Q_{B0}, Q_{C0} = The level of Q_A, Q_B, Q_C , respectively, before the indicated steady-state input conditions were established
 Q_{An}, Q_{Bn} = The level of Q_A, Q_B , respectively, before the most recent \downarrow transition of the clock

123232- 101 BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.

DSC: R

PART NUMBER 123232-XXX

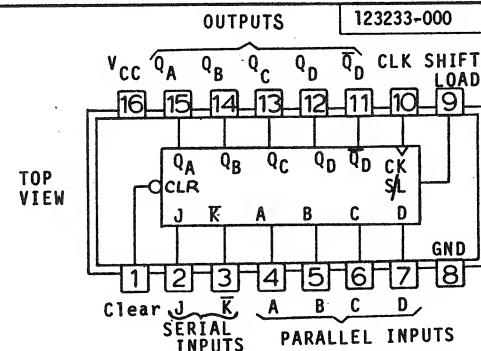
REV	DESCRIPTION	APP/DATE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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FORM 201 (R 11/80)

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.

2. PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC
DWG NO. 124000-002


123233-1XX BURNED-IN IN ACCORDANCE WITH CIPHER
DATA PRODUCTS SPEC NO. 190000.



POSITIVE LOGIC: SEE FUNCTION TABLE

DSC: R

PART NUMBER 123233-XXX

REV	DESCRIPTION	APP/DATE											DO NOT SCALE DRAWING TOLERANCES .XX± ANGULAR .XXX± ± MODEL NEXT ASSY				I.C., 4-BIT, PARALLEL ACCESS SHIFT REGISTER		CODE 109
1	PROD. DEL	1/80											THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE REPRODUCED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.		DRAWN D. WILSON JAN 28 82 CHECK <i>John Mathani</i> 2/1/82 APPR <i>Joe Kendrick</i> 2/30/82		123233-000 CODE IDENT 52465		A SHEET 1 of 3

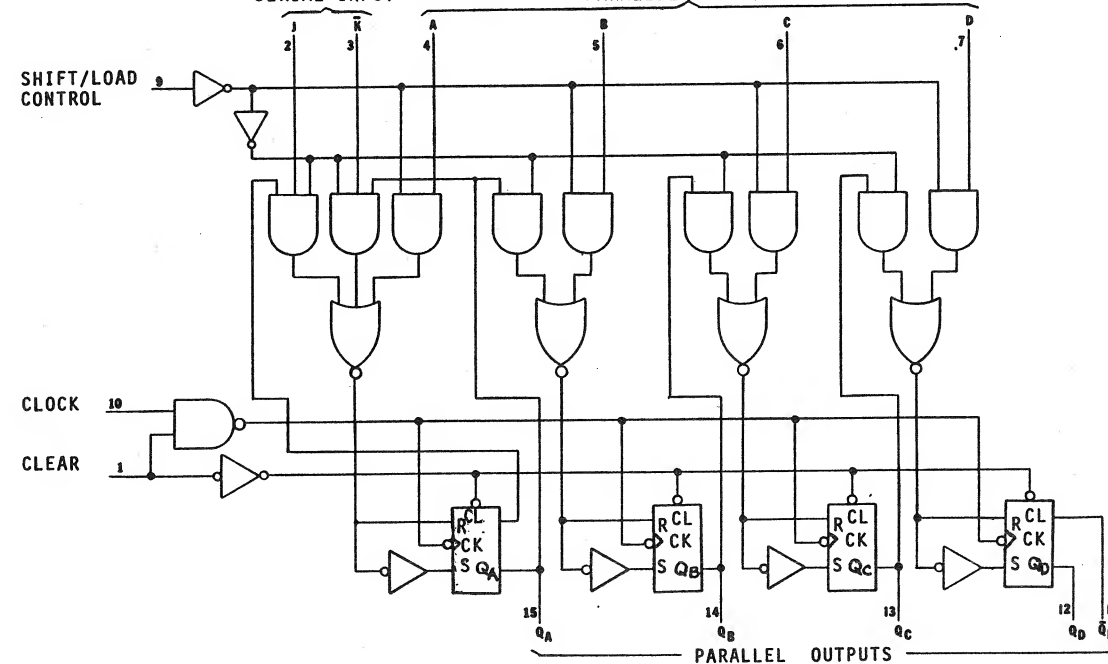
FORM 201 (R 11/80)

I.C., 8-BIT PARALLEL IN/SERIAL OUT
SHIFT REGISTER (74LS166)

123232-000	SHEET 2 OF 2
------------	--------------

FORM 202 (R.8/77)

SHIFT/LOCK
CONTROL



FUNCTIONAL BLOCK DIAGRAM

1.C., 4-BIT, PARALLEL ACCESS
SHIFT REGISTER

123233-000	SHEET 2 OF 3
------------	--------------

FORM 202 (R. 8/77)

INPUTS			OUTPUTS			
CLEAR	SHIFT/LOAD	CLOCK	SERIAL J K	PARALLEL A B C D	Q _A Q _B Q _C Q _D	Q _D Q _C Q _B Q _A
L	X	X	X X	X X X X	L L L L	H H H H
H	L	↑	X X	a b c d	a b c d	d̄ c̄ b̄ ā
H	H	L	X X	X X X X	Q _{A0} Q _{B0} Q _{C0} Q _{D0}	Q _{D0} Q _{C0} Q _{B0} Q _{A0}
H	H	↑	L H	X X X X	Q _{A0} Q _{A0} Q _{Bn} Q _{Cn}	Q _{Cn} Q _{Bn} Q _{An} Q _{An}
H	H	↑	L L	X X X X	L Q _{An}	
H	H	↑	H H	X X X X	H	
H	H	↑	H L	X X X X	Q _{An} Q _{An} Q _{Bn} Q _{Cn}	Q _{Cn} Q _{Bn} Q _{An} Q _{An}

FUNCTION TABLE

H = high level (steady state)

L = low level (steady state)


X = irrelevant (any input, including transitions)

↑ = transition from low to high level.

a,b,c,d, = the level of steady state input at A,B,C,or D, respectively.

Q_{A0},Q_{B0}, Q_{C0}, Q_{D0}= the level of Q_A,Q_B,Q_C,or Q_D,respectively, before the indicated steady state input conditions were established.

Q_{An},Q_{Bn}, Q_{Cn} = the level of Q_A,Q_B, or Q_C, respectively, before the most recent transition of the clock.

I.C., 4-BIT PARALLEL ACCESS SHIFT REGISTER		A
123233-000	SHEET 3 OF 3	

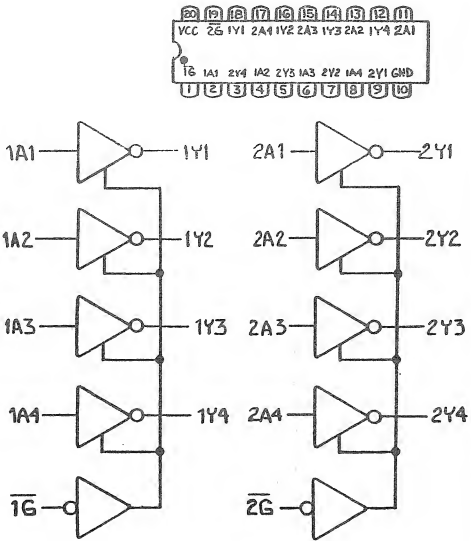
FORM 202 (R.8/77)

- NOTES:
- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
 - PACKAGE: 20 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-005

VENDOR	VENDOR PART NO.
AMD	SN74S240N
FAIRCHILD	74S240PC
NATIONAL	DM74S240N
T.I.	SN74S240N

123234 -0XX STANDARD PART

123234 -1XX BURNED-IN IN ACCORDANCE WITH CIPHER DATA PRODUCTS SPEC NO. 190000.

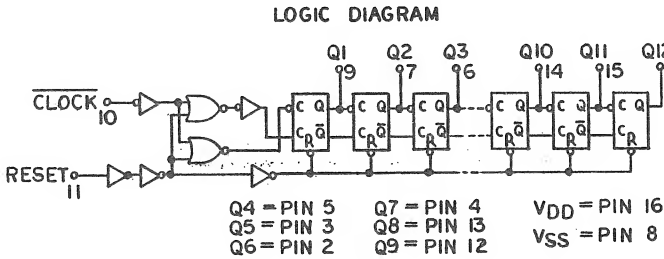


REV		DESCRIPTION		DATE		APP/DATE		DO NOT SCALE DRAWING		TOLERANCES		ANGULAR		MODEL		NEXT ASSY		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF PERKIN-ELMER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PERKIN-ELMER MEMORY PRODUCTS DIVISION.		DRAWN		CHECK		APPR		CODE IDENT		SHEET		OF			
A		PROD. REL.		1/29/82		ERO 820299		DO NOT SCALE DRAWING		.XX±		.XXX±		MODEL		NEXT ASSY		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF PERKIN-ELMER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE PERKIN-ELMER MEMORY PRODUCTS DIVISION.		D.WILSON		1/29/82		Kam Mathan		1/29/82		CODE IDENT 52465		SHEET 1		OF 1	

FORM 201 (R 11/80)

- NOTES:
- ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET.
 - PACKAGE: 16 PIN DIP PER CIPHER DATA PRODUCTS SPEC DWG NO. 124000-002

VENDOR	VENDOR PART NO.
MOTOROLA	MC14040BCP
NATIONAL	CD4040CN
SGS	HCF4040BE



123240-000

NOTES:

1. ELECTRICAL CHARACTERISTICS: PER APPLICABLE VENDOR DATA SHEET

2. PACKAGE: 40 PIN DIP

VENDOR	VENDOR PART NO.
INTEL	D8748
NEC	D8748D

PIN CONFIGURATION

TO	1	40	Vcc
XTAL 1	2	39	T1
XTAL 2	3	38	P27
RESET	4	37	P26
SS	5	36	P25
INT	6	35	P24
EA	7	34	P17
ED	8	33	P16
PSEN	9	32	P15
WR	10	31	P14
ALE	11	30	P13
DB0	12	29	P12
DB1	13	28	P11
DB2	14	27	P10
DB3	15	26	VDD
DB4	16	25	PROG
DB5	17	24	P23
DB6	18	23	P22
DB7	19	22	P21
VSS	20	21	P20

DSC: R PART NUMBER: 123240-001

DO NOT SCALE DRAWING

TOLERANCES: .XX± ANGULAR .XXX± ±

MODEL: I.C., SINGLE COMPONENT 8-BIT MICRO COMPUTER (8748) CODE 109

NEXT ASSY: 123240-000 C

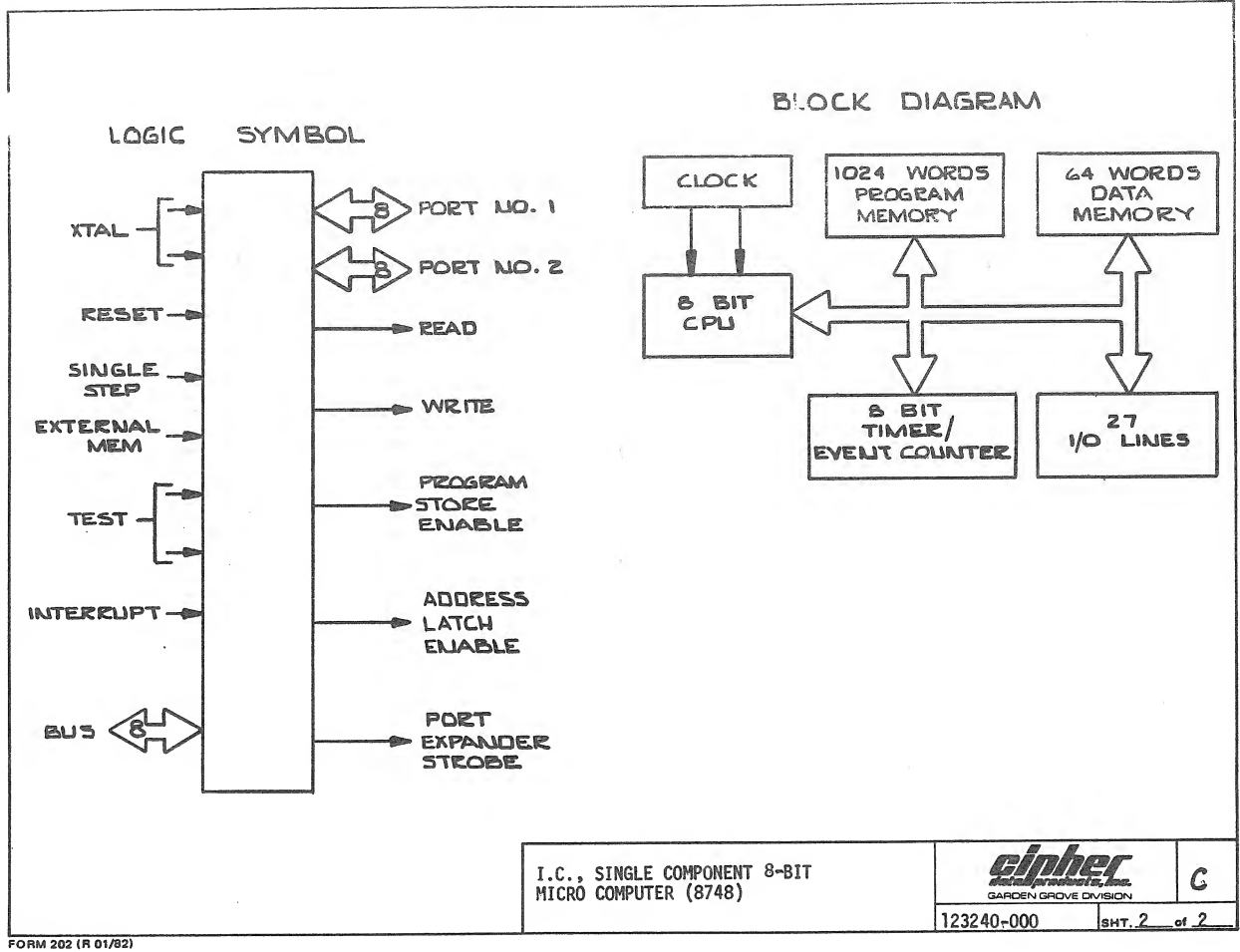
DRAWN: MATTHES 3/1/82

CHECK: Sam Maklou 3/2/82

APPR: Jess Kendrick 4/22/82

CODE IDENT: SHT. 1 of 2

FORM 201 (R 01/82)



125006-000

NOTES:

1. CASE TYPE: TO-220

2. ELECTRICAL: Per Applicable Vendor Data Sheets.

CDP PART NO.	OUTPUT VOLTAGE	FAIRCHILD PART NO.	MOTOROLA PART NO.	TEXAS INSTRUMENT PART NO.	NATIONAL PART NO.	SIGNETICS PART NO.
125006-005	5	JJA 7805UC	MC 7805CT	JJA7805CKC	LM7805CT	JJA7805CU
-006	6	JJA 7806UC	MC 7806CT	JJA7806CKC	LM7806CT	JJA7806CU
-008	8	JJA 7808UC	MC 7808CT	JJA7808CKC	LM7808CT	JJA7808CU
-012	12	JJA 7812UC	MC 7812CT	JJA7812CKC	LM7812CT	JJA7812CU
-015	15	JJA 7815UC	MC 7815CT	JJA7815CKC	LM7815CT	JJA7815CU
-018	18	JJA 7818UC	MC 7818CT	JJA7818CKC	LM7818CT	JJA7818CU

INPUT GROUND OUTPUT

.950 MIN

.139 DIA

.147 DIA

.045

.025

(TOP VIEW)

PART NUMBER 125006-XXX SEE TABULATION

DO NOT SCALE DRAWING

TOLERANCES: .XX± ANGULAR .XXX± ±

MODEL: I.C., POSITIVE 3 TERMINAL REGULATOR (TO-220 TYPE CASE, 7800 SERIES) CODE 109

NEXT ASSY: 125006-000 D

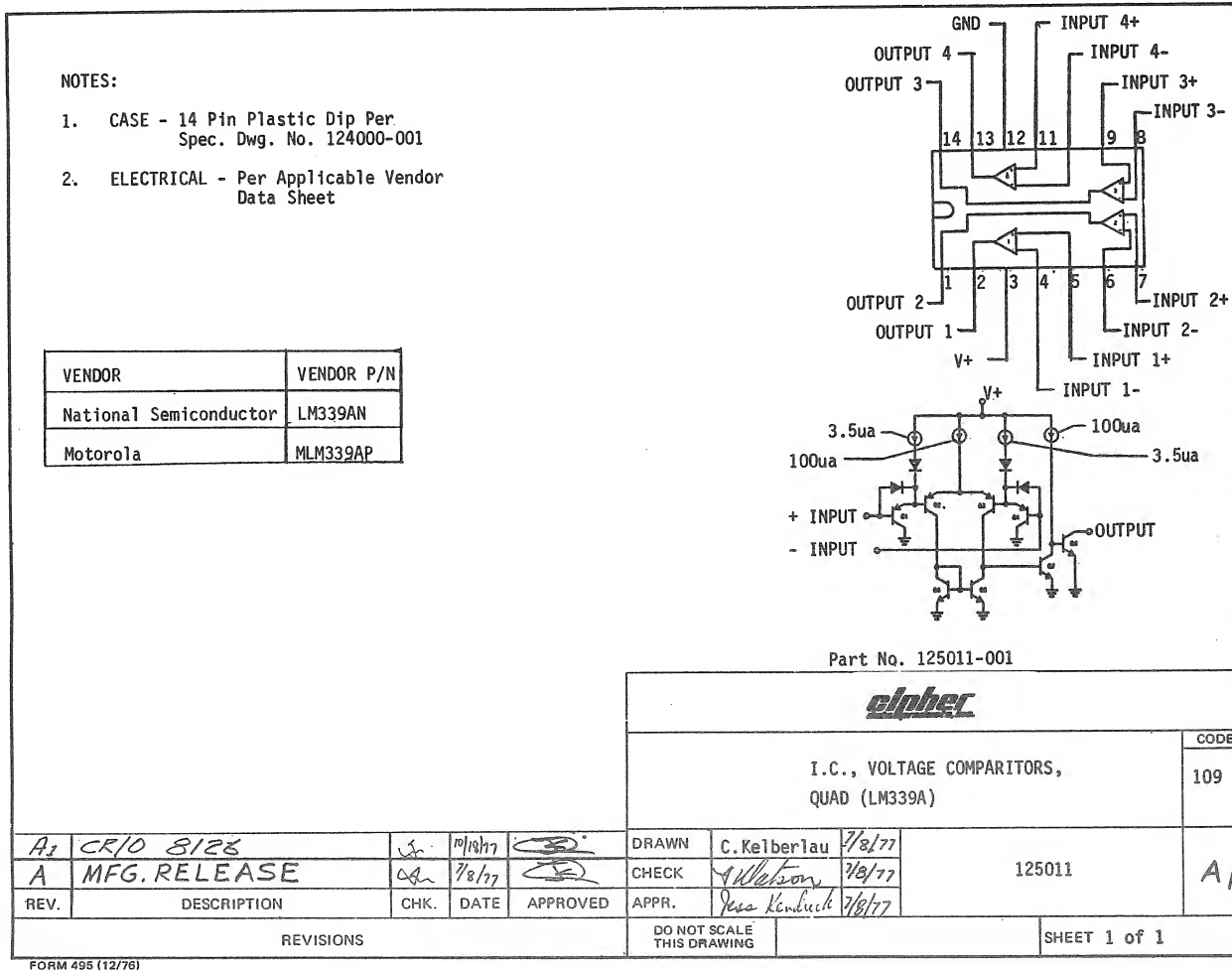
DRAWN: L. HALE 5/22/78

CHECK: V. WATSON 5/22/78

APPR: J. KENDRICK 5/22/78

CODE IDENT: 52465 SHEET 1 OF 1

FORM 201 (R 1/78)



8

7

6

5

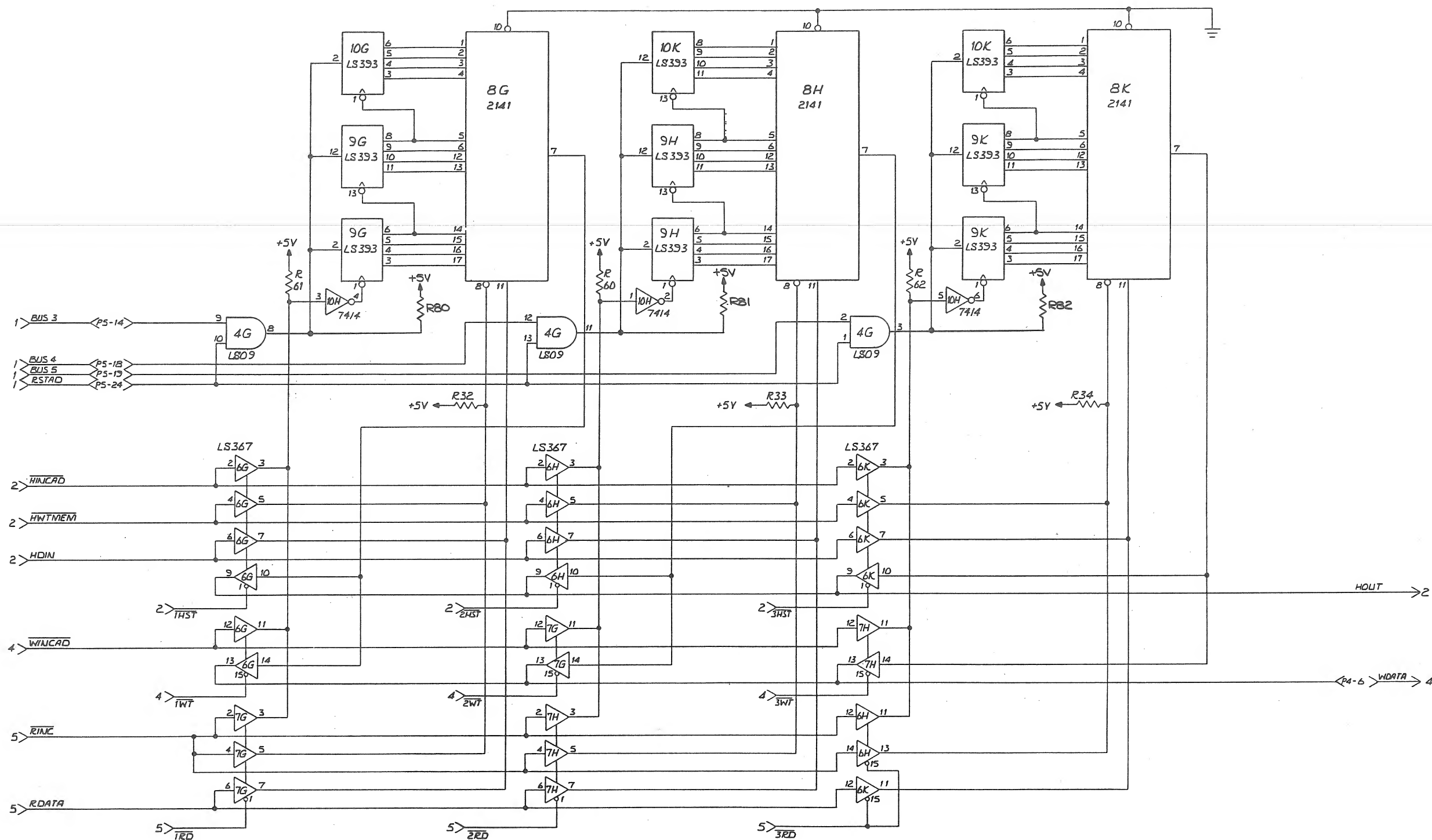
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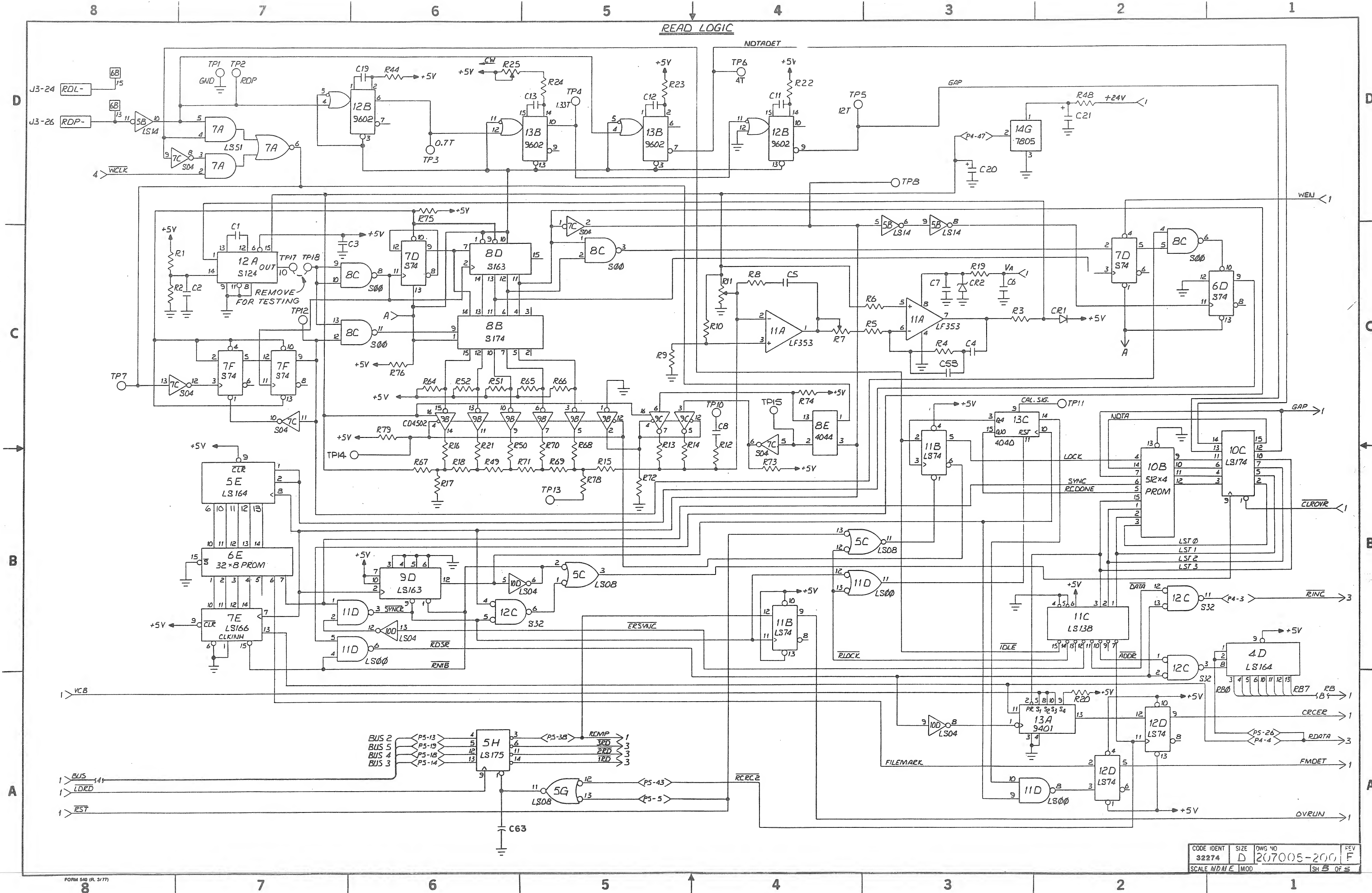
3

2

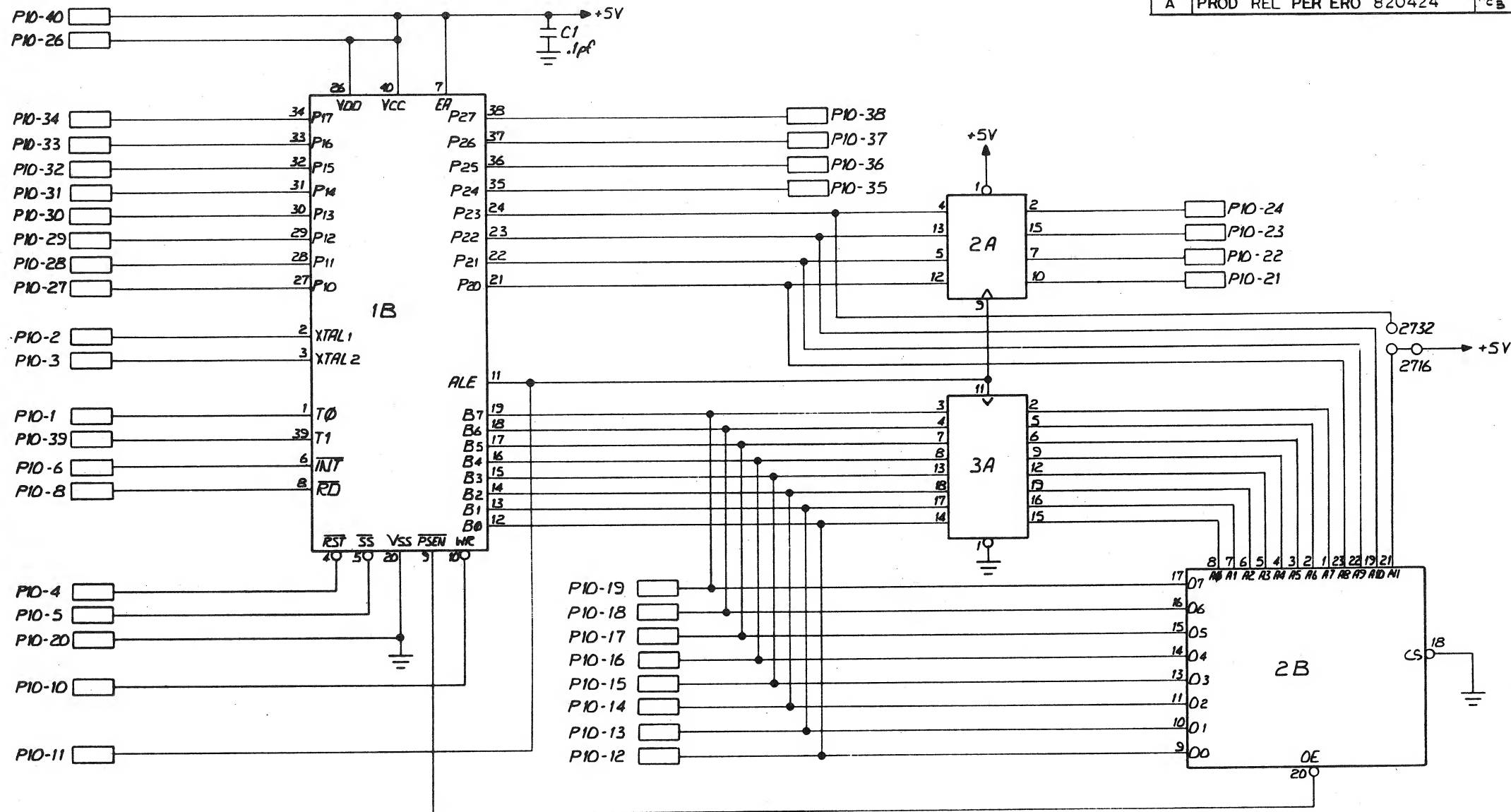
1

BUFFER MEMORIES





REVISIONS				207011-200
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG REL 8-30-81	2ND	9/1/81	CM 11/3/81
O1	PIL REL ERO 82030A	KAM	3/5/82	
O1	ECO 12442	KAM	9/24/82	R. Paulsen
O12	ECO 12505	Jad	9/24/82	R. Paulsen
A	PROD REL PER ERO 820424	RCB	12/8/82	



IC DESIGNATORS				REF DESIGNATORS	
LOCATION	TYPE	PWR	GND	LAST USED	NOT USED
1B	8035	7,26,40	20	C1	
2B	2716/2732	24	12,18		
2A	74LS175	1,16	8		
3A	74LS373	20	1,10		

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NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R

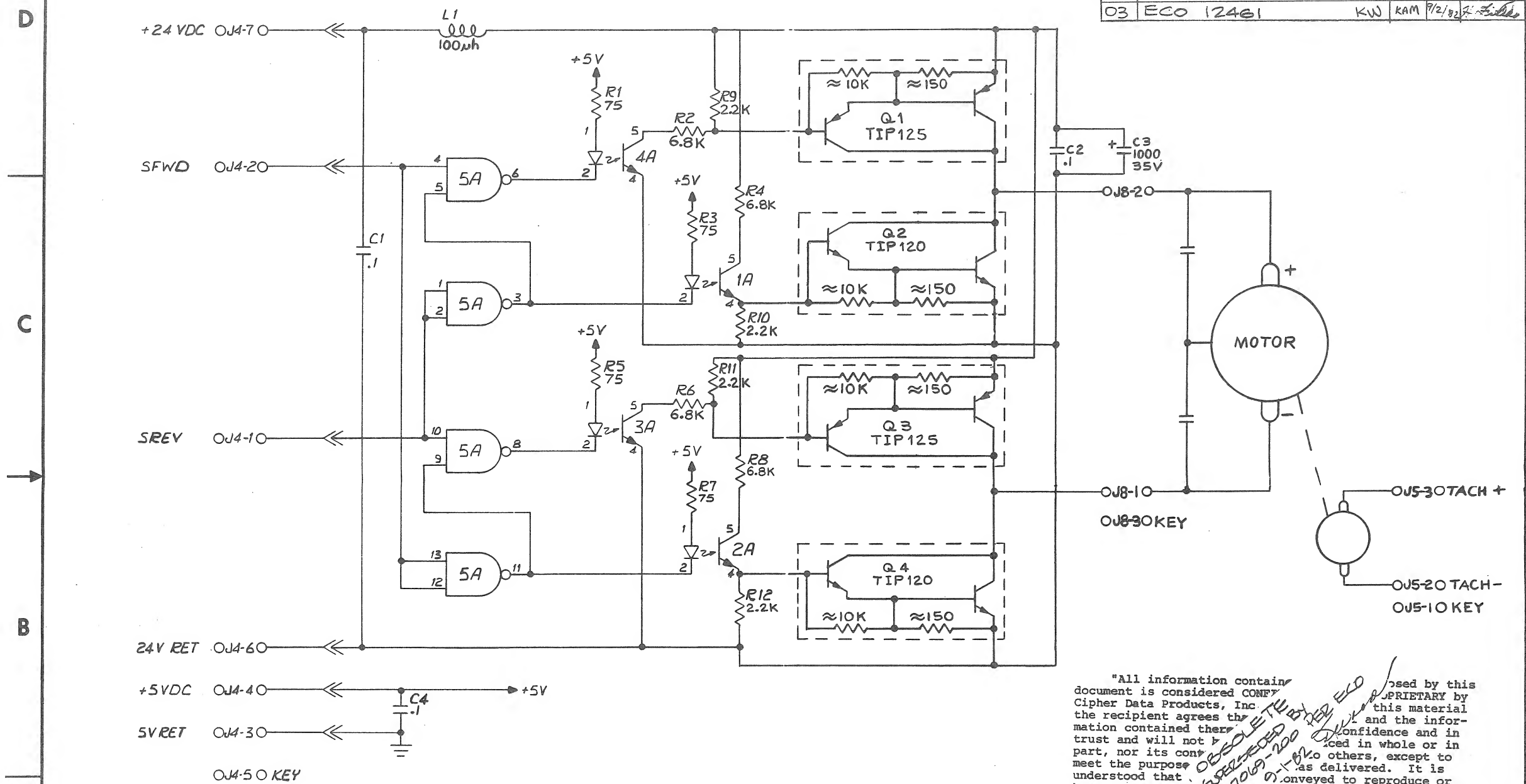
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE DECIMALS
.X = .XX
.XXX = .XXX
ANGLES = DO NOT SCALE
DRAWING

D & D MGR	W. J. P. 8-11-81
ME MGR	W. J. P. 8-12-81
DOC MGR	W. J. P. 11-12-81
UL/CSA	W. J. P. 11/1/81

APPROVAL	DATE	DWN L. SCHOTT 8/30/81	CHK	2ND 9/1/81	2-108
MECH	W. J. P. 8/30/81				
ELEC	W. J. P. 8/30/81				
MFG	W. J. P. 8/30/81				
MATL	W. J. P. 8/30/81				
QA	W. J. P. 8/30/81				
MKT	W. J. P. 8/30/81				
ISSUED	W. J. P. 8/30/81				
TITLE		SCHEM-MICROCOMPUTER EXPANDER, PWB (VERSION 2)			
CODE IDENT		SIZE	DWG NO	REV	
32274		C	207011-200	A	
SCALE		MOD	40041-001	SH	1 OF 1

1 360601-303

REVISIONS					207017-200	13
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
A	ENG REL		8-29-81			
01	PIL REL ECO 820309	KAM	3/5/82			
02	ECO 12179	HS	4/27/82			
03	ECO 12461	KW	7/2/82			



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D & D MGR	11/11/81
ME MGR	11/12/81
DOC MGR	11/12/81
UL/CSA	11/11/81

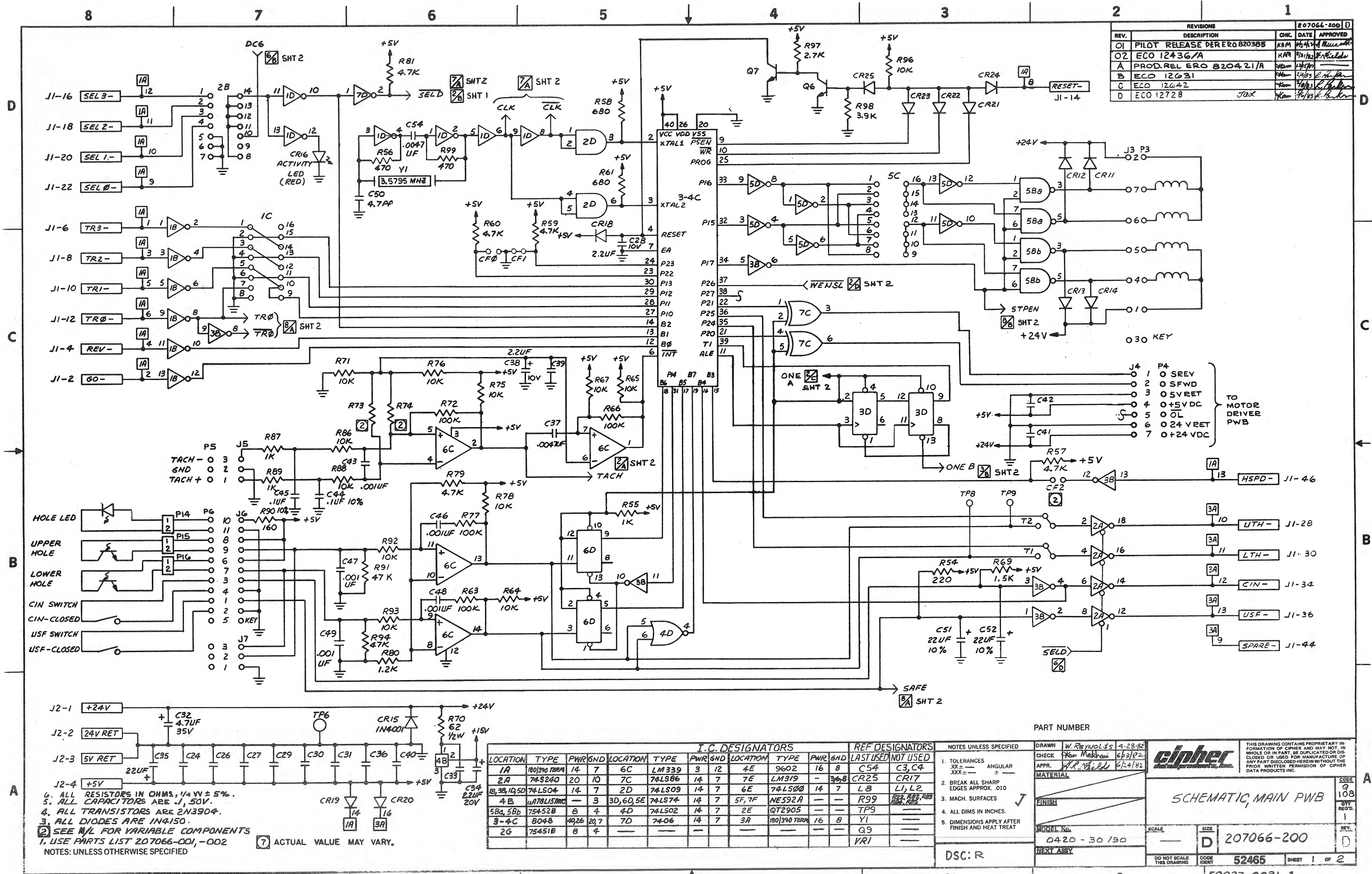
HISTORICAL RECORD
DO NOT DESTROY

DSC: 7

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVAL	DATE	DWN L. SCHOTT 8/1/81	
TOLERANCES ARE DECIMALS	MECH	11/11/81	CHK FVO 11/11/81	
ANGLES ARE	ELEC	11/11/81	TITLE	
DO NOT SCALE DRAWING	MFG	11/11/81	CODE IDENT	
	MATL	11/11/81	SIZE	
	QA	11/11/81	DWG NO	
	MKT	11/11/81	32274	
	ISSUED	11/11/81	SCALE	

IC DESIGNATORS				REF DESIGNATORS	
LOCATION	TYPE	PWR	GND	LAST USED	NOT USED
1A, 2A, 3A, 4A	4N28	-	-	C4	
5A	743B	14	7	L2	
				R12	
				Q4	

2. ALL CAPACITORS IN MICROFARADS.
1. ALL RESISTORS IN OHMS, 1/4W, 5%
NOTES: UNLESS OTHERWISE SPECIFIED



REVISIONS			
REV.	DESCRIPTION	CHK.	DATE
O1	PILOT RELEASE DEREG 820385	KAM	4/24/82
O2	ECO 12436/A	KAM	4/21/82
A	PROD. REL ERO 820421/A	WDM	4/25/82
B	ECO 12631	WDM	4/25/82
C	ECO 12642	WDM	4/25/82
D	ECO 12728	JAX	4/25/82

I.C. DESIGNATORS				REF DESIGNATORS			
LOCATION	TYPE	PWR	GND	LOCATION	TYPE	PWR	GND
1A	1801390 TERN	14	7	6C	LM339	3	12
2A	74LS240	20	10	7C	74LS86	14	7
1B, 3B, 12, 5D	74LS04	14	7	2D	74LS09	14	7
4B	7478LS154MC	—	3	3D, 6D, 5E	74LS74	14	7
5B, 5Bb	75452B	8	4	4D	74LS02	14	7
3-4C	8048	20, 23	7D	7A	7406	14	7
2G	75451B	8	4				

NOTES UNLESS SPECIFIED		DRAWN		W. REVOLIS		4-28-82	
1. TOLERANCES XX ± ANGULAR ±		CHECK		KAM		6/3/82	
2. BREAK ALL SHARP EDGES APPROX. .010		APPR.		KAM		6/24/82	
3. MACH. SURFACES		MATERIAL					
4. ALL DIMS IN INCHES.		FINISH					
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		MODEL NO.		0420 - 30 / 90			
DSC: R		NEXT ASSY					
		SCALE		SIZE		207066-200	
		DO NOT SCALE THIS DRAWING		CODE IDENT		52465	
				SHEET		1 OF 2	

6. ALL RESISTORS IN OHMS, 1/4 W ± 5%.

7. ALL CAPACITORS ARE .1, .50V.

8. ALL TRANSISTORS ARE 2N3904.

9. ALL DIODES ARE 1N4150.

10. SEE M/L FOR VARIABLE COMPONENTS

11. USE PARTS LIST 207066-001, -002

12. ACTUAL VALUE MAY VARY.

8

7

6

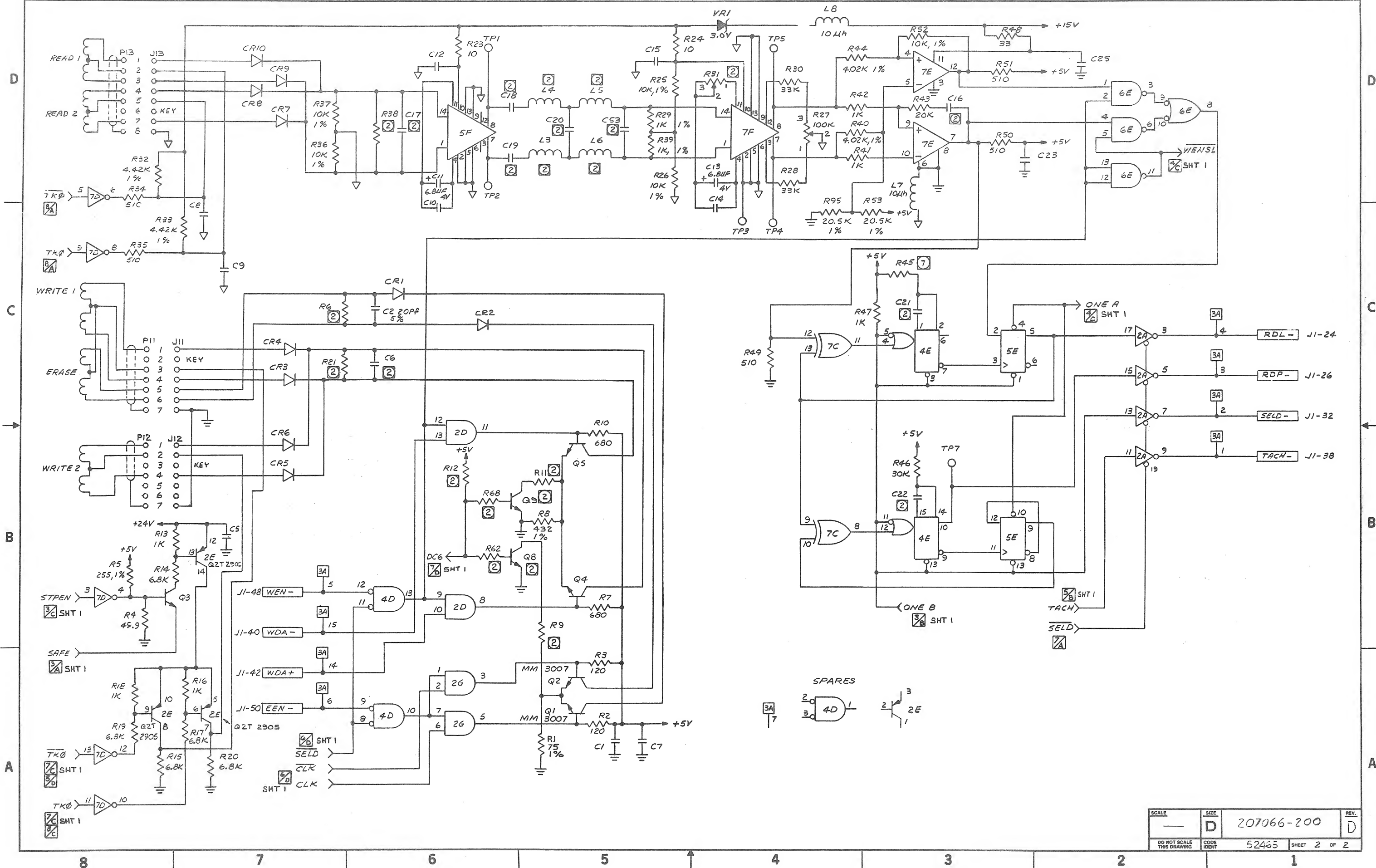
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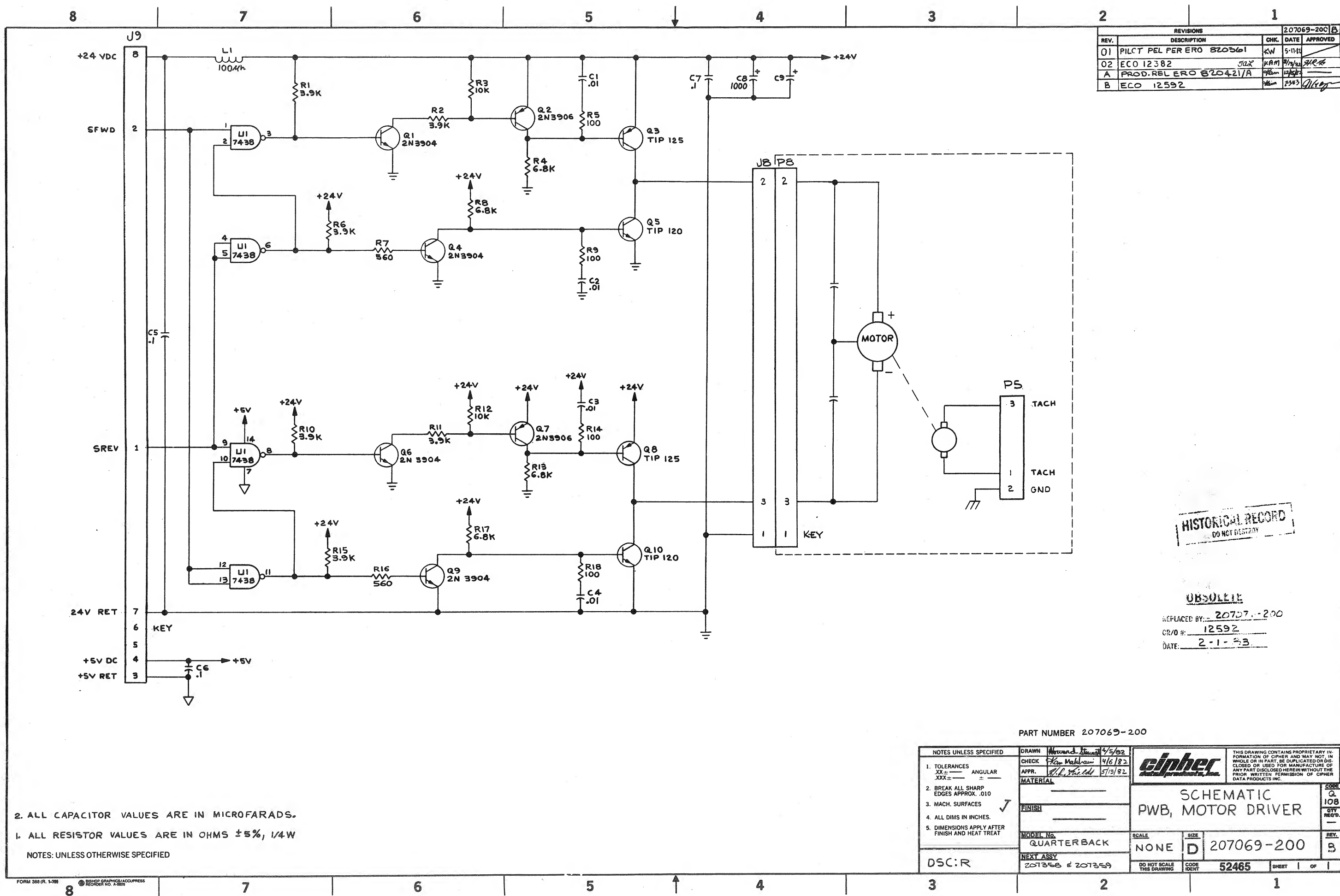
4

3

2

1





REVISIONS				207069-200
REV.	DESCRIPTION	CHK.	DATE	APPROVED
01	PILCT PEL PER ERO 820361	KW	5-11-81	
02	ECO 12382	JAX	9/13/82	
A	PROD.REL ERO 820421/A	JAX	12/15/82	
B	ECO 12592	JAX	1/13/83	

HISTORICAL RECORD
DO NOT DESTROY

OBSOLETE

REPLACED BY: 20707-200
CR/O #: 12592
DATE: 2-1-83

2. ALL CAPACITOR VALUES ARE IN MICROFARADS.
1. ALL RESISTOR VALUES ARE IN OHMS $\pm 5\%$, 1/4W
NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER 207069-200

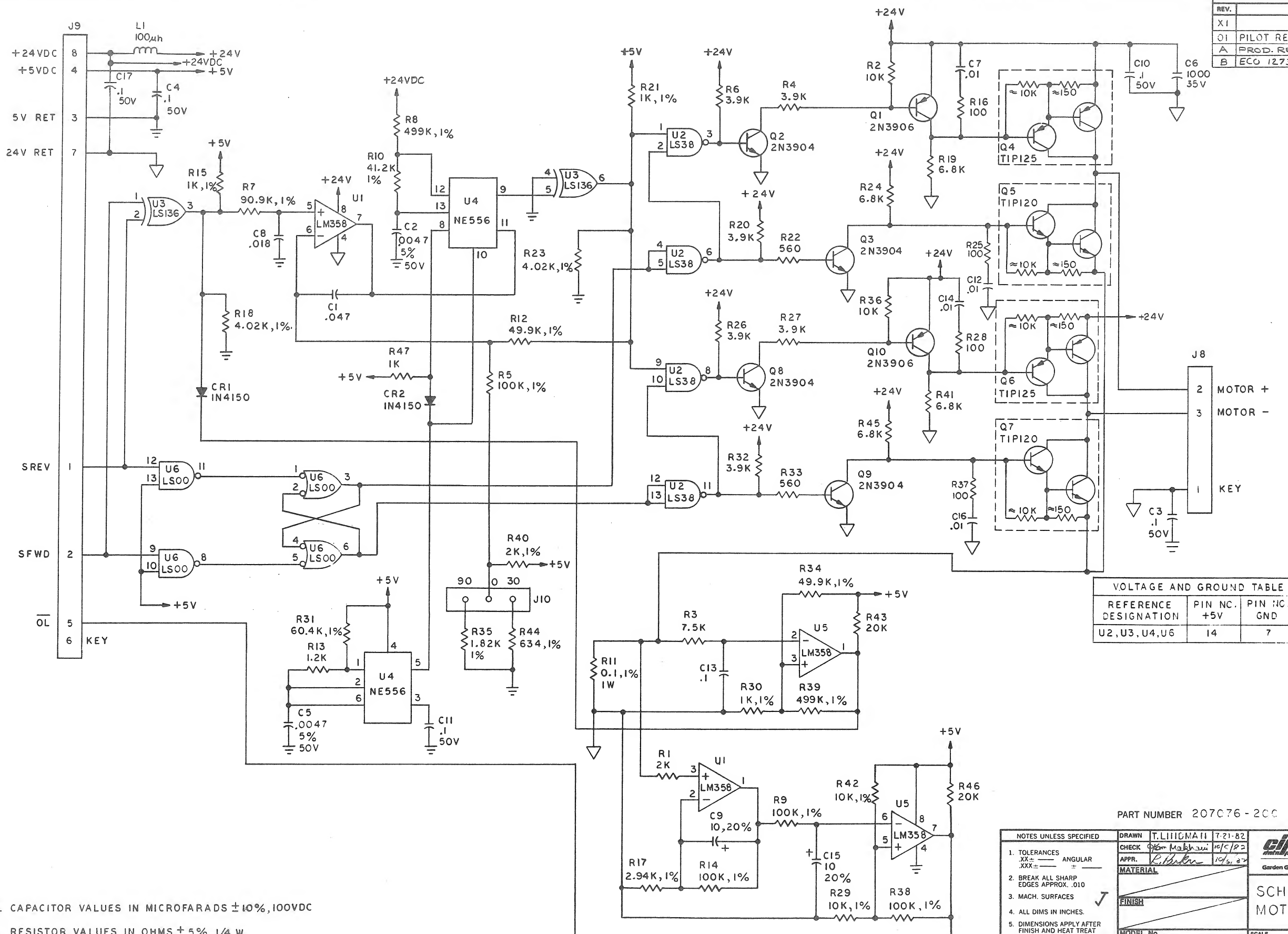
NOTES UNLESS SPECIFIED		DRAWN: Howard K. Smith 4/5/82		CHECK: Alan Mahkran 4/6/82	
1. TOLERANCES XX±— ANGULAR XXX±— ±—		APPR: R.L. Smith 5/13/82		MATERIAL	
2. BREAK ALL SHARP EDGES APPROX. .010		FINISH		MODEL No.	
3. MACH. SURFACES		QUARTERBACK		SCALE	
4. ALL DIMS IN INCHES.		NEXT ASSY		NONE	
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		207358 & 207359		SIZE	
DSC:R		DO NOT SCALE THIS DRAWING		D	
		CODE IDENT		207069-200	
		SHEET		52465	
		OF		1	



SCHEMATIC
PWB, MOTOR DRIVER

CODE
Q
108
QTY
REQ'D
REV.
B

REVISIONS					207076-200
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
X1					
01	PILOT REL PER ERO 800418	KAM			
A	PROD. REL PER ERO 820448	Ram			
B	ECO 12738	Ram	9/18/82		



2. ALL CAPACITOR VALUES IN MICROFARADS $\pm 10\%$, 100VDC
1. ALL RESISTOR VALUES IN OHMS $\pm 5\%$, 1/4 W
NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER 207076-200

NOTES UNLESS SPECIFIED	DRAWN T. LINDMAN 7-21-82		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART BE DUPLICATED, COPIED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.			
1. TOLERANCES .XX ± ANGULAR .XXX ±	CHECK 9/18/82					
2. BREAK ALL SHARP EDGES APPROX. .010	APPR. 9/18/82					
3. MACH. SURFACES	MATERIAL					
4. ALL DIMS IN INCHES.	FINISH	MODEL No. QUARTERBACK	SCALE 1:1	SIZE D	207076-200	REV. B
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DO NOT SCALE THIS DRAWING	CODE IDENT	SHEET 1	OF 1		

DSC: R

SECTION 2

ASSEMBLY DRAWINGS

2.1 INTRODUCTION

This section contains the assembly drawings and material lists for all the assemblies in the Quarterback Tape Drive. These documents are listed in paragraph 2.2. Logic schematics are provided in Section I of this Engineering Drawing Package.

The assembly drawings identify every part on any given assembly. Parts are identified either by item number; (e.g., 1, 2, 3, etc.) or by circuit reference number (e.g., R1, C1, U1, etc.). The associated material lists incorporate these identification numbers, together with part description, Cipher part number, and part quantity, i.e., the quantity of a particular part required for a given assembly.

2.2 ASSEMBLY DRAWINGS

The following assembly drawings are provided in numerical sequence, as listed. Included are related material lists.

	Dwg. No.
Assembly, Main PWB . . . . .	.207002-100
Assembly, Controller . . . . .	.207005-100
Assembly, Microcomputer Expander PWB . . . . .	.207011-100
Assembly, Motor Driver PWB . . . . .	.207017-100
Assembly, Main PWB . . . . .	.207066-100
Assembly, Motor Driver PWB . . . . .	.207069-100
Assembly, Diode/Slow Speed Motor Kit 30 lps . . . . .	.207072-100
Assembly, Cable-Motor Driver PWB . . . . .	.207073-100
Assembly, Motor Driver PWB . . . . .	.207076-100
Outline Drawing, Basic Cartridge Tape Drive . . . . .	.207302-001
Outline Drawing, Intelligent Cartridge Tape Drive . . . . .	.207303-001
Assembly, Main Frame . . . . .	.207304-100
Assembly, Drive Motor . . . . .	.207314-100
Assembly, Sensor . . . . .	.207324-100
Assembly, Sensor Harness . . . . .	.207326-100
Assembly, Carriage . . . . .	.207329-100
Pictorial, MTT F420 . . . . .	.207350-100
Pictorial, MTT 0420 . . . . .	.207358-100
Assembly, Main Frame . . . . .	.207393-100
Assembly, Ground Strap Cable . . . . .	.207394-100

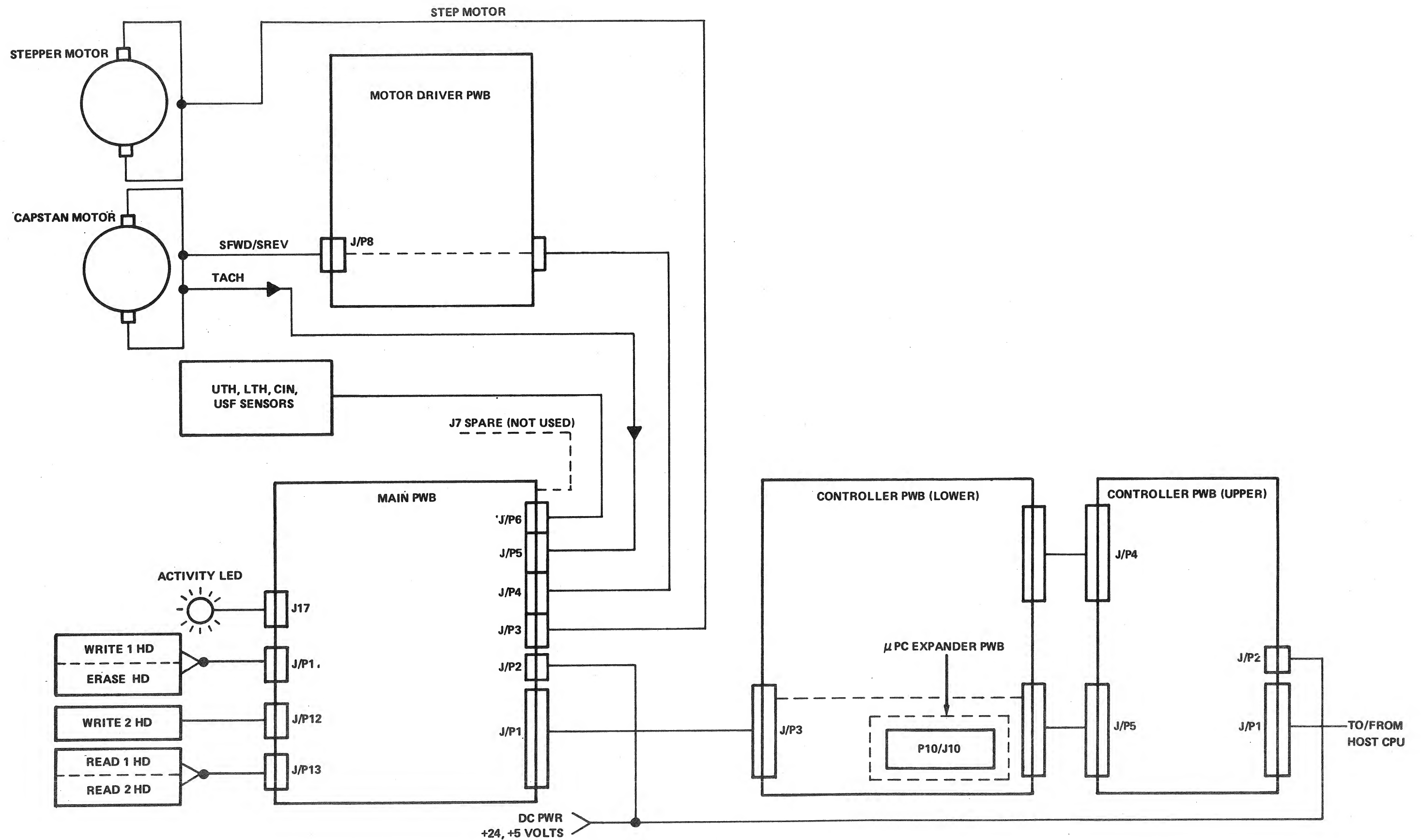
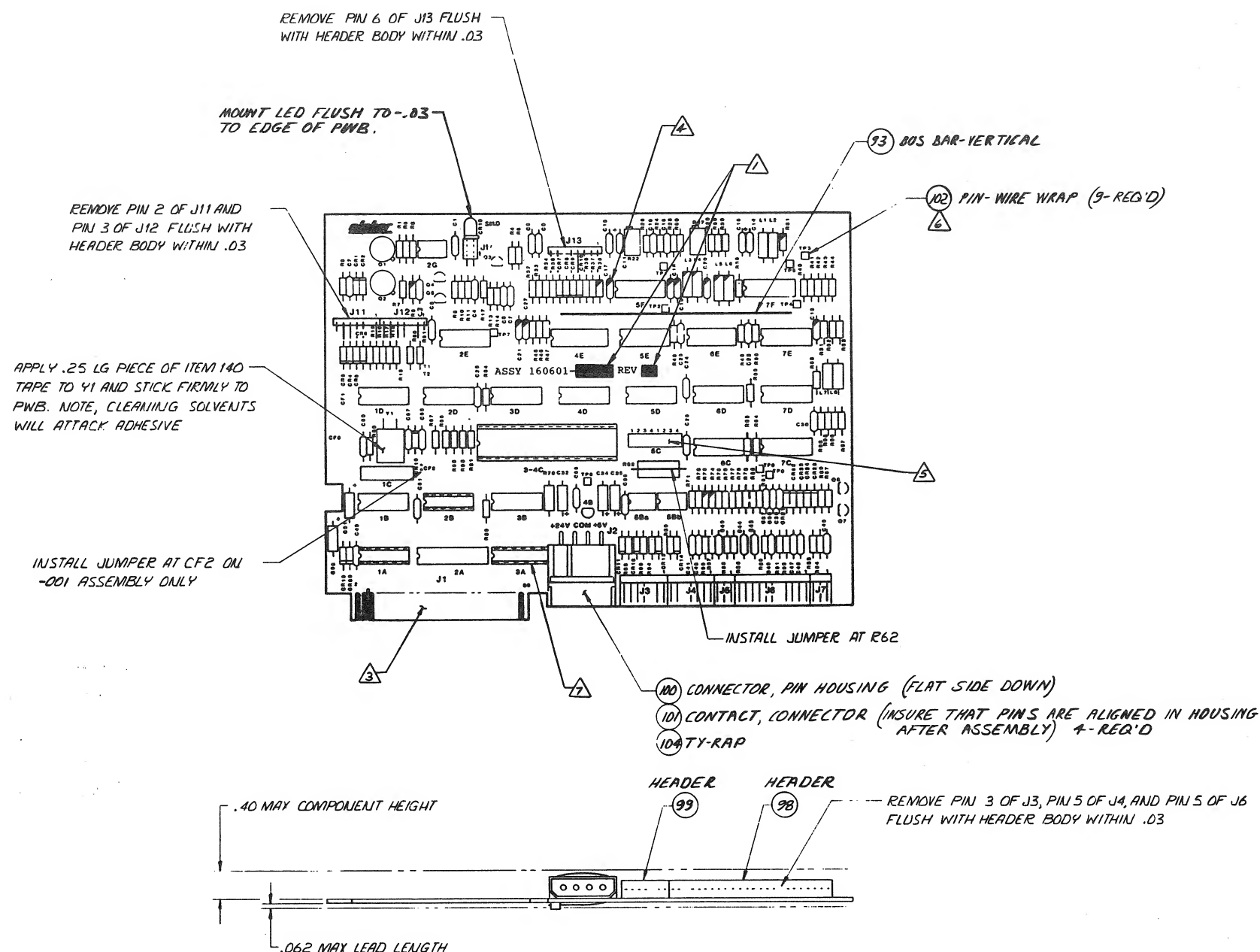


FIGURE 2-1. QUARTERBACK INTELLIGENT TAPE DRIVE, INTERCONNECT DIAGRAM

REVISIONS				207002-100
REV	DESCRIPTION	CHK	DATE	APPROVED
Δ	ENG REL	LVS	11/11/87	CK 11/11/87
01	PIL REL ERO 820309	KAM	3/5/82	
02	ECO 12315	KAM		
A	PROD. REL ERO 820421/A	KAM	12/1/82	



1. INSTALL COMPONENTS 1A, 3A, 2B, AND 3-4C IN SOCKETS AFTER FLOW SOLDERING AND CLEANING
2. PRESS TEST POINT PINS INTO PWB PRIOR TO FLOW SOLDERING
3. INSTALL ITEM 103 JUMPER CLIPS ON PIN SETS 1 OF HEADER 5C
4. COMPONENTS MARKED WITH TRIANGLE IN CORNER HAVE UNIQUE VALUES FOR EACH ASSY VERSION
5. MASK CONNECTOR FINGERS PRIOR TO FLOW SOLDERING

2. FOR SCHEMATIC REFER TO DWG 207002-200

1. MARK APPROPRIATE DASH NO. AND REVISION LETTER WHERE SHOWN USING .12 IN. HIGH WHITE CHARACTERS PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NO. SEE SEPARATE M/L

D & D MGR	11/11/87
ME MGR	11/11/87
DOC MGR	11/11/87
UL/CSA	11/11/87

DSC: R

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APPROVAL	DATE	OWN	L	SCHOTT	9/2/81	elpher	SAN DIEGO CALIF
MECH	11/21/87	CHK	218	11/21/87			
ELEC	11/11/87	TITLE					
MFG	11/11/87						
MATL	11/11/87						
QA	11/11/87						
MKTG	11/11/87						
ISSUED	11/11/87	SCALE	1:1	MOD	50030-001/SH	1	OF 1

REV. 11/20/88-301 1 160600-001-001

REL. SCH. # 50027-001



5	52	61	REV
S 7 0 1 1	207002 - 001	6	
ASSEMBLY PART NUMBER			

FORM 783 (R 05/90)

S 7 0 1 1	M P	207002 - 001	REV 8
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ASSEMBLY PARTS NUMBER

FORM 7000-1/8 C100A

S 7 0 1 1	M P	207002 - 001	REV 8
-----------	-----	--------------	----------

ASSEMBLY PARTS NUMBER

FORM 755B (R 08/30)

S 7 0 1 1	M P	207002 -001	RE B
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ASSEMBLY PARTS NUMBER

FORM 755B (R 09/80)

S 7 0 1 1	M P	207002 - 001	REV 8
-----------	-----	--------------	----------

ASSEMBLY PARTS NUMBER

FORM 7953 (R 09/80)

S 7 0 1 1	M P	207002 — 001	RE B
-----------	-----	--------------	---------

ASSEMBLY PARTS NUMBER

FORM 7055 (R 09/80)

ASSEMBLY TITLE		ASSY, PWB - MAIN - 90 IPS		DOC CODE		Q 120	
19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
	207002 - 200	1	SCHEMATIC		0		
	207001 - 001	2	PROCESS BOARD		1		
	123234 - 001	3	I.C. 74S240	2A	1		
	123031 - 001	4	I.C. 74LS04	1B, 3B, 1D, 5D	4		
	125017 - 012	5	I.C. MA78L12	4B	1		
	101031 - 001	6	I.C. 75452	5Ba, 5Bb	2		
	125011 - 001	7	I.C. LM339	6C	1		
	123038 - 001	8	I.C. 74LS86	7C	1		
	123123 - 001	9	I.C. 74LS09	2D	1		
	123030 - 001	10	I.C. 74LS02	4D	1		
	123036 - 001	11	I.C. 74LS74	3D, 6D, 5E	3		
	100331 - 001	12	I.C. 7406	7D	1		
	101139 - 001	13	I.C. 75451	2G	1		
	100234 - 001	14	I.C. 9602	4E	1		
PREPARED BY CHECKED BY DESIGN ENGINEER		DATE 1-14-82 1-26-82 1-29-82		0412494 0312435 0212185 0112185 01PIL REL		DATE 11/10/81 9/2/82 11/10/81 11/10/81 11/10/81	
				12636 12636 12636 12636 12636		820287 2 1 82	
				207358 0420-90		NEXT ASSEMBLY MODEL NO. 0420-90	

19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000

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19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
						WHOLE 12	DECIMAL 13	
	101156	- 161	36	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 160	R90	1		
	101156	- 473	37	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 47K	R91, 94	2		
	101156	- 122	38	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 1.2K	R80	1		
	101156	- 101	39	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 100	R82-85	4		
	101156	- 470	40	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 47	R4	1		
	101156	- 682	41	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 6.8K	R14, 15, 17, 19, 20	5		
	101156	- 121	42	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 120	R2, 3			
	101156	- 511	43	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 510	34, 35, 49, 50, 51	5		
	101156	- 303	44	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 30K	R45, 46	2		
	101156	- 100	45	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 10	R23	3		
	101156	- 221	46	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 220	R54	1		
	101156	- 330	47	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 33	R48	1		
	101156	- 102	48	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 1K	R13, 16, 18, 41, 42, 47, 55, 73, 74, 87, 89	11		
	101156	- 302	49	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 3K	R38	1		
	101156	- 203	50	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 20K	R43	1		
	101156	- 152	51	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 1.5K	R69	1		
	101156	- 272	52	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 2.7K	R97	1		
	101156	- 392	53	RESISTOR, $\frac{1}{2}W$ $\pm 5\%$ 3.9K	R98	1		
	100155	- 232	54	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 255	R5	1		
	100155	- 181	55	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 75	R1	1		
	100155	- 351	56	RESISTOR, $\frac{1}{2}W$ $\pm 1\%$ 4.42K	R32, 33	2		

FORM 7558 (R 05/80)
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PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M.
19	20	21			WHOLE 12	DECIMAL 18	CODE
M.P.	100155 - 385	57	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 10K	R25, 26, 36, 37, 52	5		
M.P.	100155 - 289	58	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 1K	R29, 39	2		
M.P.	100155 - 254	59	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 432	R8	1		
M.P.	100155 - 302	60	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 1.37K	R31	1		
M.P.	100155 - 347	61	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 4.02K	R40, 44	2		
M.P.	100155 - 415	62	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 20.5K	R53, 95	2		
M.P.	142027 - 003	63	TERMINATOR - 14 PIN 220/330 OHM	1A	1		
M.P.	142032 - 001	64	TERMINATOR - 16 PIN 220/330 OHM	3A	1		
M.P.	138002 - 104	65	POTENTIOMETER $\frac{1}{2}w$, 100K	R27	1		
M.P.	102769 - 475	66	CAP., TANT. 35v $\pm 20\%$ 4.7uf	C32	1		
M.P.	102768 - 226	67	CAP., TANT. 10v $\pm 20\%$ 22uf	C35, 51, 52	3		
M.P.	102768 - 225	68	CAP., TANT. 10v $\pm 20\%$ 2.2uf	C28, 38	2		
M.P.	102871 - 225	69	CAP., TANT. 20v $\pm 20\%$ 2.2uf	C34	1		
M.P.	102870 - 685	70	CAP., TANT. 4v $\pm 20\%$ 6.8uf	C11, 13	2		
	102665 - 104	71	CAP., CER. 50v $\pm 20+80\%$.1 uf	C1, 5, 7-10, 12, 14, 15, 23-27, 29-31, 33, 36, C39-42	23		
	-						
	102667 - 104	72	CAP., CER. 50v $\pm 10\%$.1 uf	C44, 45	2		
	102667 - 102	73	CAP., CER. 50v $\pm 10\%$.001 uf	C43, 46-49	5		
	102667 - 472	74	CAP., CER. 50v $\pm 10\%$.0047uf	C37	1		
	102666 - 479	75	CAP., CER. 50v $\pm 5\%$ 4.7pf	C50	1		
	102669 - 331	76	CAP., CER. 50v $\pm 5\%$ 330pf	C17	1		

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PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
19	28				WHOLE 12	DECIMAL 13	18
M P	102669 - 301	77	CAP., CER. 50v +5% 300pf	C18,19	2		
M P	102669 - 750	78	CAP., CER. 50v +5% 75pf	C20	1		
M P	102669 - 330	79	CAP., CER. 50v +5% 33pf	C16,21,22	3		
M P	-	80					
M P	-	81					
M P	-	82					
M P	-	83					
M P	-	84					
M P	-	85					
M P	102669 - 200	86	CAP., CER. 50v +5% 20pf	C2	1		
M P	122502 - 003	87	INDUCTOR 56uh +5%, 164ma	L5,6	2		
M P	122502 - 001	88	INDUCTOR 10uh +5%, 290ma	L7,8	2		
M P	122502 - 006	89	INDUCTOR 240uh +5%, 101ma	L3,4	2		
M P	122502 - 004	90	INDUCTOR 120uh +5%, 124ma	L1,2	2		
	-	91					
	-	92					
	102002 - 001	93	BUS BAR - VERTICAL		1		
	100143 - 002	94	PAD, TRANSISTOR, TO-5	Q1,2	2		
M	120905 - 011	95	HEADER, DOUBLE ROW, STRAIGHT	5C	1		
	120916 - 001	96	HEADER, RIGHT ANGLE	J13	1		
	120916 - 002	97	HEADER, RIGHT ANGLE	J11,12	1		

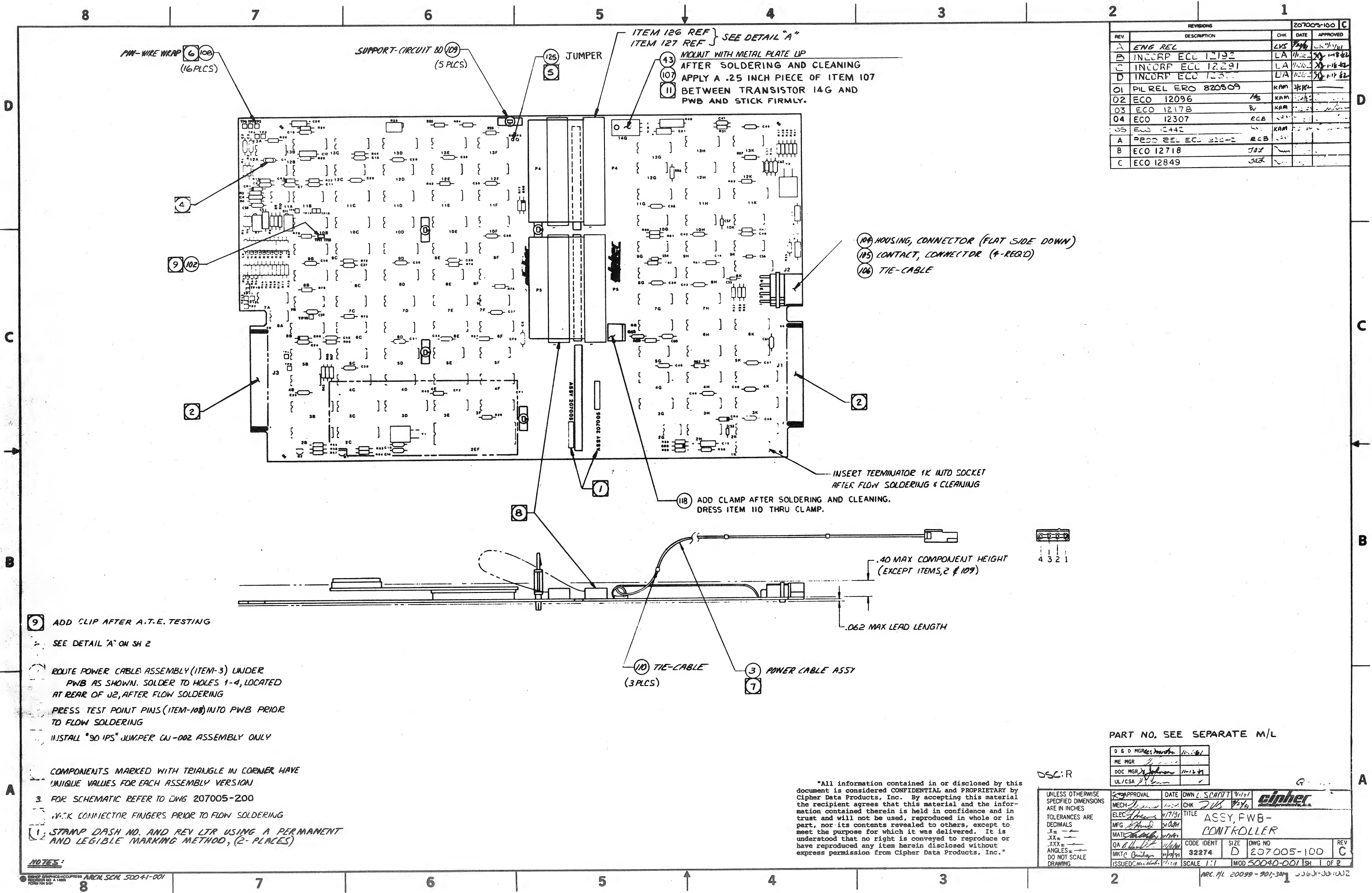
FORM 750B (R 05/80)

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19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	WHOLE		DECIMAL		21	CODE	22
						12	13	14	15			
MP	120915	- 024	98	HEADER, RIGHT ANGLE	J4-7			1				
MP	120915	- 007	99	HEADER, RIGHT ANGLE	J3			1				
MP	105084	- 001	100	CONNECTOR-HOUSING, 4 PIN	J2			1				
MP	106019	- 001	101	CONTACT, PIN	J2			4				
MP	100360	- 001	102	PIN, WIRE WRAP, .025 SQ.	TP1-9			9				
MP	104903	- 001	103	CLIP, JUMPER, .025 SQ. POST	5C			2				
MP	100171	- 002	104	TY-RAP 1/16-1 1/4	J2			1				
MP	150107	- 001	105	TAPE, DOUBLE COATED POLYURETHANE FOAM	y1					1		
MP	-	-	106									
MP	164021	- 926	107	WIRE, HOOKUP 26 AWG	R22,62					1		
MP	100121	- 001	108	DIODE, ZENER (1N5221)2.4V±10%	VR1							
MP	-	-										
MP	207002	- 100	110	ASSY, DMG				0				
MP	207000	- 001	111	PRINTED MASTER				0				
MP	100155	- 437	113	RESISTOR, 1/4W ±1% 34.8K	R45			1				
MP	-	-										
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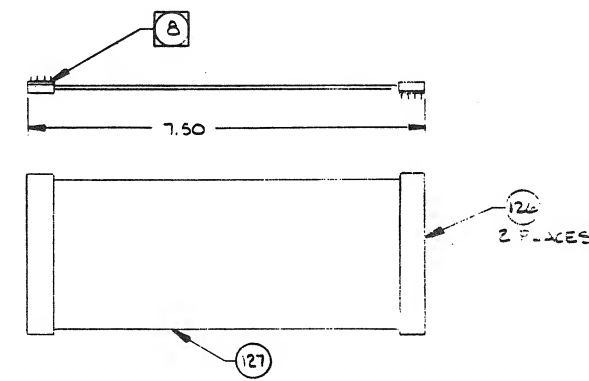
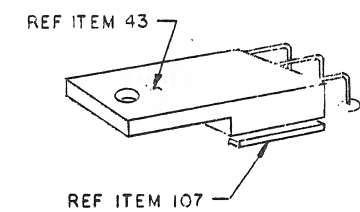
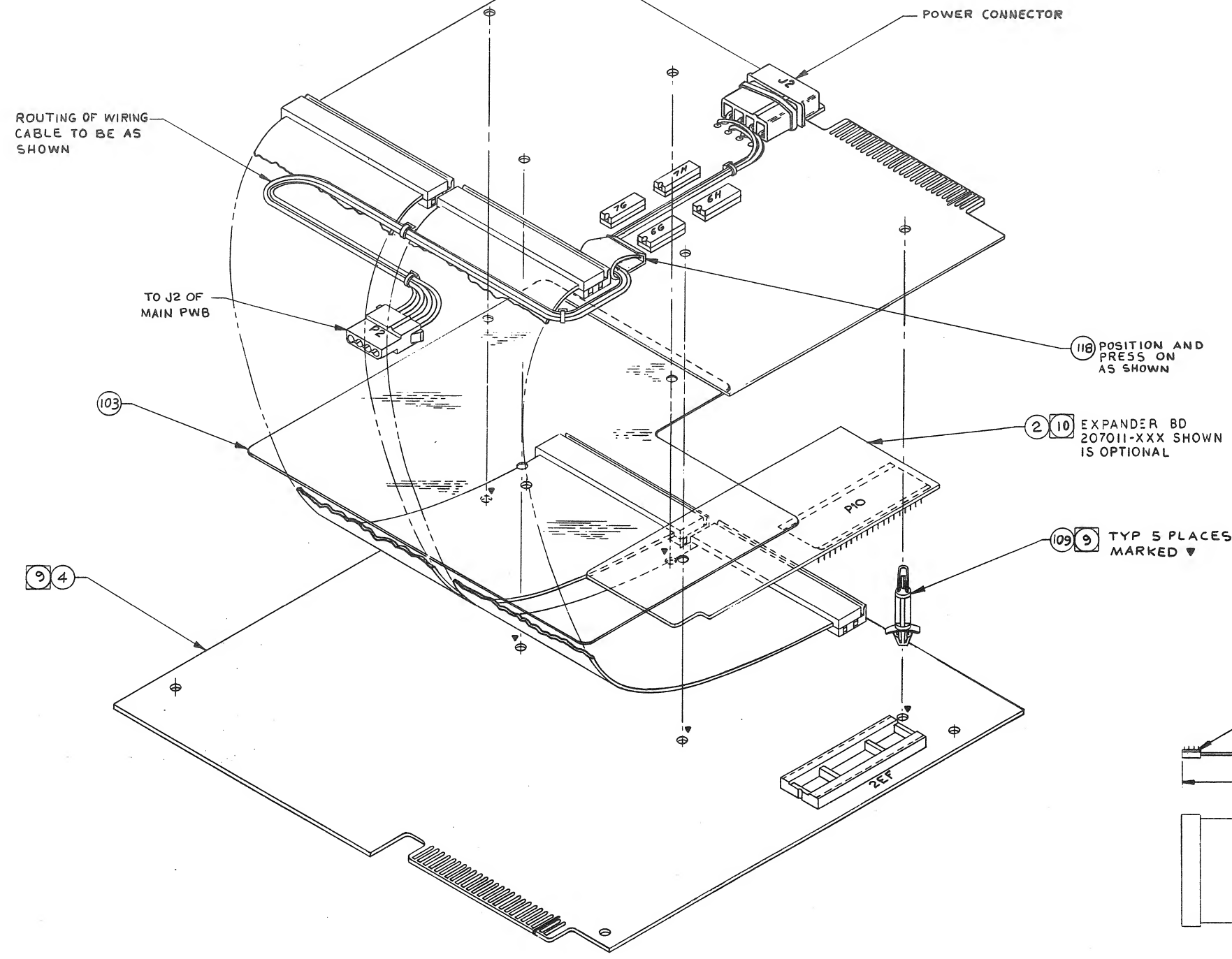
FORM 755B (R 02/80)

PAGE 6 OF 1



REVISIONS					207005-100	C
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
—	SEE SHT 1	—	—	—		

D
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B
A



- 1 SEE DETAIL "B"
- 10 PLUG ITEM 2 (MICROCOMPUTER ASSEMBLY) INTO SOCKET OF CONTROLLER PWB AT POSITION 2EF AS SHOWN.
- A 9 BREAK ITEM 4 (CONTROLLER PWB) AT SLOTS BETWEEN P4 AND P5 CABLES. CUT OFF EXCESS TABS AND MOUNT PWBS USING ITEM 109 (SUPPORT) AS SHOWN.

NOTES: UNLESS OTHERWISE SPECIFIED

SCALE	SIZE	207005-100	REV.
1:1	D		C
DO NOT SCALE THIS DRAWING	CODE IDENT	52465	SHEET 2 OF 2



ASSEMBLY PARTS LIST (CONTINUATION)

S 7 0 1 1 M P 207005 - 001 REV N

19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	12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S 7 0 1 1	M P	207005 - 002	REV P
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ASSEMBLY PARTS NUMBER

PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
19	20				WHOLE 12	DECIMAL 10	
M P	102666	- 479	98 CAP., CER. 50v $\pm 5\%$ 4.7pf	C51	1		
M P	102669	- 561	99 CAP., CER. 100v $\pm 5\%$ 560pf NPO	C52	1		
M P	151031	- 001	100 TRANSISTOR, PNP 2N3906	Q1	1		
M P	151030	- 001	101 TRANSISTOR, NPN 2N3904	Q2	1		
M P	104903	- 001	102 CLIP, JUMPER .025 SQ POST	TP17-18	1		
M P	207338	- 001	103 SHIELD, CABLE		1		
M P	105084	- 001	104 CONNECTOR-HOUSING, 4 PIN	J2	1		
M P	106019	- 001	105 CONTACT, PIN	J2	4		
M P	100171	- 002	106 TY-RAP 1/16-1 $\frac{1}{4}$	J2	1		
M P	150107	- 001	107 TAPE, DOUBLE COATED POLYURETHANE FOAM	146			5 06
M P	100360	- 001	108 PIN, WIRE WRAP, .025 SQ.	TP1-18	18		
M P	147805	- 001	109 SUPPORT, CIRCUIT BOARD		5		
M P	100171	- 001	110 TY-RAP 1/16 TO 5/8		3		
M P	102669	- 911	111 CAP., CER. 100v $\pm 5\%$ 910pf NPO	C11	1		
	102664	- 103	112 CAP., CER. 50V-20% $\pm 80\%$ 0.01uf Z5U	C53-C57	5		
	102667	- 102	113 CAP., CER. 100WVDC $\pm 10\%$ 1000pf	C62	1		
	101156	- 202	114 Resistor, 1/4W $\pm 5\%$ 2K	R5	1		
	101156	- 682	115 RESISTOR, $\frac{1}{4}$ W $\pm 5\%$ 6.8K	R83	1		
	101156	- 331	116 RESISTOR, 1/4W $\pm 5\%$ 330	R84	1		
	101156	- 221	117 RESISTOR, 1/4W $\pm 5\%$ 220	R85	1		
	104804	- 001	118 CLAMP, CABLE		1		

PAGE 6 OF 10



1	5	52	51	REV
S 7 0 1 1	M P	207005 - 002		P

[illegible]

FORM 795 (R 03/02) (Continuation)



1	5	52	51	REV
S 7 0 1 1	M P	207005	— 003	
ASSEMBLY PART NUMBER				

PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
19	20				WHOLE 12	DECIMAL 10	
M P	207026 - 001	34	ASSY, PROM 256 X 4 (WRITE SEQUENCER)	9F	1		
M P	207024 - 001	35	ASSY, PROM 32 X 8 (READ DECODER)	6E	1		
M P	123238 - 001	36	I.C. MM5257N-25	8G, 8H, 8K	3		
M P	125040 - 001	37	I.C. TL082P	11A	1		
M P	101022 - 001	38	I.C. LM311	2G	1		
M P	123036 - 001	39	I.C. 74LS74	11B, 6C, 12D, 12F 12G, 12H	6		
M P	100336 - 001	40	I.C. 7438	4B	1		
M P	207027 - 001	41	ASSY, PROM 256 X 4 (HOST SEQUENCER)	11K	1		
M P	207025 - 001	42	ASSY, PROM 32 X 8 (WRITE ENCODER)	13H	1		
M P	125006 - 005	43	I.C. UA7805UC	14G	1		
M P	123237 - 001	44	I.C. 74LS373	3D	1		
M P	123023 - 001	45	I.C. 74S74	7D, 6D, 7F	3		
M P	123028 - 001	46	I.C. 74S00	8C	1		
M P	123046 - 001	47	I.C. 74S04	7C	1		
M P	101031 - 001	48	I.C. 75452	6A	1		
M P	123119 - 001	49	I.C. 74S163	8D	1		
M P	123120 - 001	50	I.C. 74S174	8B	1		
M P	123152 - 001	51	I.C. 74LS273	2C	1		
M P	146014 - 016	52	SOCKET, DIP - 16 CONTACTS	1K, 6B	2		

FORM 795 (B 03/82) (Continuation)



Garden Grove Division		1		5		42		61		RF	
ASSEMBLY TITLE:		DOC CODE:		S		7		0		1	
ASSY, PWB - CONTROLLER - 30 IPS DSC:R		Q120		M		P		207005		- 003	

ASSEMBLY PART NUMBER											
PART NUMBER		ITEM NO.		DESCRIPTION		REMARKS		QUANTITY		U.M. CODE	
								WHOLE DECIMAL			
								12 18			
M.P.		207005 - 200	1	SCHEMATIC				0			
M.P.		207011 - 002	2	ASSY, 8-BIT MICROCOMPUTER EXPANDER		2EF (207041-002 is Alternate)		1			
M.P.		207021 - 001	3	ASSY, POWER CABLE - CONTROL				1			
M.P.		207004 - 001	4	PROCESS BOARD				1			
M.P.		I23029 - 001	5	I.C. 74LS00		7B, IID		2			
M.P.		I23149 - 001	6	I.C. 74LS01		I3F		1			
M.P.		I23031 - 001	7	I.C. 74LS04		I0D, I2E, I2K		3			
M.P.		I23032 - 001	8	I.C. 74LS08		5C, 5G		2			
M.P.		I23034 - 001	9	I.C. 74LS11		I0F		1			
M.P.		I23047 - 001	10	I.C. 74LS14		5B		1			
M.P.		I23035 - 001	11	I.C. 74LS32		5F, 11F		2			
M.P.		I23093 - 001	12	I.C. 74LS51		7A		1			
M.P.		I23084 - 001	13	I.C. 74LS109		I3E		1			
M.P.		I23100 - 001	14	I.C. 74LS138		I1C, 5D, I0E		3			
PREPARED BY		DATE						DWG REL NO.		DATE	
J. MAY		01-11-83						820-FAS		01/17/83	
CHECKED BY		DATE								MMDDYY	
Tom Mak		1/17/83									
DESIGN ENGINEER				L 12986 K 12855				NEXT ASSEMBLY		207350	
L.H.B.				K 12855				MODEL NO.		F420-30	
				REV ECO DATE / SIGNATURE		REV ECO DATE / SIGNATURE					



S 7 0 1 1	M P	207005	— 003
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ASSEMBLY PART NUMBER

19		PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
							WHOLE	DECIMAL	
							12	13	14
M P	146014	-- 040	53	SOCKET, DIP - 40 CONTACTS	2EF		1		
M P	107201	-- 001	54	DIODE 1N4150	CRI, 3-6		5		
M P	100373	-- 012	55	DIODE, ZENER 1N759A	CR2		1		
M P	106500	-- 114	56	CRYSTAL 3.579545 MHz	Y2		1		
M P	106500	-- 115	57	CRYSTAL 6.00 MHZ	Y1		1		
M P	101156	-- 105	58	RESISTOR, $\frac{1}{4}w \pm 5\%$ 1.0M	R59		1		
M P	101156	-- 302	59	RESISTOR, $\frac{1}{4}w \pm 5\%$ 3K	R2, 8		2		
M P	101156	-- 750	60	RESISTOR, $\frac{1}{4}w \pm 5\%$ 75	R20, 42		2		
M P	101156	-- 392	61	RESISTOR, $\frac{1}{4}w \pm 5\%$ 3.9K	R87		1		
M P	101156	-- 511	62	RESISTOR, $\frac{1}{4}w \pm 5\%$ 510	R3, 5, 19, 35		4		
M P	101156	-- 102	63	RESISTOR, $\frac{1}{4}w \pm 5\%$ 1K	R1, 28, 29, 31-34, 36-41 47, 51, 52, 55, 60-62,		29		
M P	--				64-66, R73-77, 79 R26, 27, 43, 45, 46, 56 57, 86		8		
M P	101156	-- 472	64	RESISTOR, $\frac{1}{4}w \pm 5\%$ 4.7K					
M P	101156	-- 512	65	RESISTOR, $\frac{1}{4}w \pm 5\%$ 5.1K	R23, 44		2		
M P	101156	-- 103	66	RESISTOR, $\frac{1}{4}w \pm 5\%$ 10K	R24, 78		2		
M P	101156	-- 362	67	RESISTOR, $\frac{1}{4}w \pm 5\%$ 3.6K	R6, 80-82		4		
M P	101156	-- 333	68	RESISTOR, $\frac{1}{4}w \pm 5\%$ 33K	R13, 14		2		
M P	101156	-- 473	69	RESISTOR, $\frac{1}{4}w \pm 5\%$ 47K	R22, 58		2		
M P	101156	-- 244	70	RESISTOR, $\frac{1}{4}w \pm 5\%$ 240K	R30		1		



ASSEMBLY PARTS LIST
(CONTINUATION)

S 7 0 1 1 M P 207005 — 003 REV. L

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
						WHOLE	DECIMAL			
M P	100155 — 164		71	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 49.9	R53	1				
M P	101156 — 203		72	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 20K	R72	1				
M P	101156 — 562		73	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 5.6K	R4	1				
M P	101156 — 154		74	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 150K	R12	1				
M P	100155 — 232		75	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 225	R54	1				
M P	100155 — 414		76	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 20K	R9, 10, 15, 16, 21, 50 68, 70	8				
M P	100155 — 385		77	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 10K	R18, 49, 69, 71	4				
M P	100155 — 443		78	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 40.2K	R17, 67	2				
M P	101156 — 271		79	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 270 OHMS	R63	1				
M P	100067 — 101		80	RESISTOR, $1\frac{1}{2}w$ $\pm 5\%$ 100	R48	1				
M P	138002 — 503		81	POTENTIOMETER $\frac{1}{2}w$, 50K	R11	1				
M P	138002 — 103		82	POTENTIOMETER $\frac{1}{2}w$, 10K	R25, R7	2				
M P	138002 — 503		83	POTENTIOMETER $\frac{1}{2}w$, 50K	R7					
M P	142032 — 002		84	TERMINATOR, 16 PIN, 180/390 OHM	IK	1				
M P	102768 — 225		85	CAP., TANT. 10v $\pm 20\%$ 2.2uf	C15	1				
M P	102768 — 475		86	CAP., TANT. 10v $\pm 20\%$ 4.7uf	C20	1				
M P	102768 — 226		87	CAP., TANT. 10v $\pm 20\%$ 22uf	C16	1				
M P	102769 — 475		88	CAP., TANT. 35v $\pm 20\%$ 4.7uf	C17, 21	2				
M P	102668 — 472		89	CAP., CER. 50v $\pm 5\%$ 4700pf NPO	C4	1				

FORM 798 (R 03/82) (Continuation)

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ASSEMBLY PARTS LIST
(CONTINUATION)

S 7 0 1 1 M P 207005 — 003 REV. L

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
						WHOLE	DECIMAL			
M P	102665 — 104		90	CAP., CER. 50v -20-80% 0.10uf Z5U	C2, 3, 6, 7, 8, 24-50	32				
M P	102669 — 301		91	CAP., CER. 100v $\pm 5\%$ 300pf NPO	C9, 10, 60, 61, 63	5				
M P	102667 — 563		92	CAP., CER. 100v $\pm 10\%$.056uf X7R	C5	1				
M P	102669 — 150		93	CAP., CER. 100v $\pm 5\%$ 15pf NPO	C14	1				
M P	102669 — 330		94	CAP., CER. 100v $\pm 5\%$ 33pf NPO	C1	1				
M P	102669 — 911		95	CAP., CER. 100v $\pm 5\%$ 910pf NPO	C13	1				
M P	102668 — 122		96	CAP., CER. 50v $\pm 5\%$ 1200pf NPO	C19	1				
M P	102668 — 822		97	CAP., CER. 50v $\pm 5\%$ 8200pf NPO	C12	1				
M P	102666 — 479		98	CAP., CER. 50v $\pm 5\%$ 4.7pf	C51	1				
M P	102669 — 561		99	CAP., CER. 100v $\pm 5\%$ 560pf NPO	C52	1				
M P	151031 — 001		100	TRANSISTOR, PNP 2N3906	Q1	1				
M P	151030 — 001		101	TRANSISTOR, NPN 2N3904	Q2	1				
M P	104903 — 001		102	CLIP, JUMPER .025 SQ POST	TP17-18	1				
M P	207338 — 001		103	SHIELD, CABLE						
M P	105084 — 001		104	CONNECTOR-HOUSING, 4 PIN	J2	1				
M P	106019 — 001		105	CONTACT, PIN	J2	4				
M P	100171 — 002		106	TY-RAP 1/16 -1%	J2	1				
M P	150107 — 001		107	TAPE, DOUBLE COATED POLYURETHANE FOAM	I4G			5	06	
M P	100360 — 001		108	PIN, WIRE WRAP, .025 SQ.	TP1-18	18				

FORM 798 (R 03/82) (Continuation)

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ASSEMBLY PARTS LIST
(CONTINUATION)

S 7 0 1 1 M P 207005 — 003 REV. L

19	PART NUMBER	28	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
						WHOLE	DECIMAL			
	147805 — 001		109	SUPPORT, CIRCUIT BOARD		5				
M P	100171 — 001		110	TY-RAP 1/16 to 5/8		3				
M P	102668 — 272		111	CAP., CER. 50v $\pm 5\%$ 2700pf NPO	C11	1				
M P	102664 — 103		112	CAP., CER. 50v -20% +80% 0.01uf Z5U	C53-C57	5				
M P	102667 — 102		113	CAP., CER. 100 WVDC $\pm 10\%$ 1000 pf	C62	1				
M P	—		114							
M P	101156 — 682		115	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 6.8K	R83	1				
M P	101156 — 331		116	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 330	R84	1				
M P	101156 — 221		117	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 220	R85	1				
M P	104804 — 001		118	CLAMP, CABLE		1				
M P	—		119							
M P	123123 — 001		120	I.C. 74LS09	4G	1				
M P	123246 — 001		121	I.C. 74LS240	2K	1				
M P	123001 — 001		122	I.C. 7414	10H	1				
M P	123074 — 001		123	I.C. 74S32	12C	1				
M P	105008 — 006		126	CONN-PC, 50 PIN RIBBON	P4,5	4				
M P	101045 — 001		127	CABLE, FLAT		15			06	
M P	102669 — 221		128	CAP., CER. 100WVDC $\pm 5\%$ 220PF	C59	1				
M P	207005 — 100		130	ASSY DWG CONTROLLER		0				
M P	207003 — 001		131	PRINTED MASTER		0				

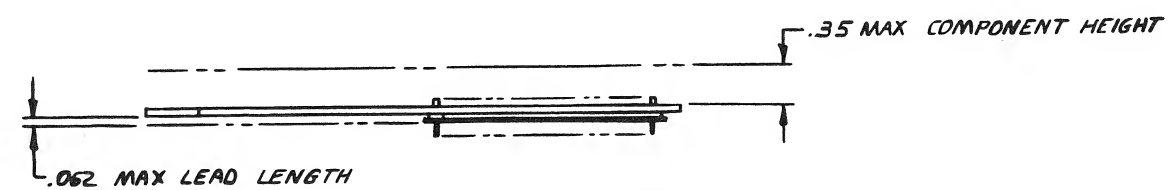
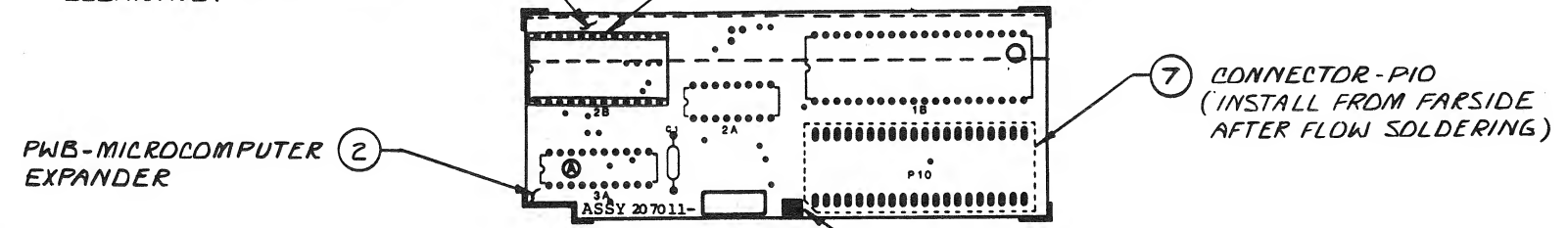
FORM 798 (R 03/82) (Continuation)

PAGE 7 OF 9

REVISION		207011-100	1
LTR	DESCRIPTION	DWN	DATE
A	ENG REL	LS	1/1/82
O1	PIL REL ERO 820309	BB	3/4/82
O1	ECO 12121	BB	3/29/82
O1	ECO 12442	CM	4/1/82
O13	ECO 12505	JAR	4/21/82
A	PROD REL PER ERO 820424	RC	1/27/83

INSTALL 4" LONG PIECE OF ITEM 10 (TAPE) TO UNDERSIDE OF PWB AFTER FLOW SOLDERING AND CLEANING.

INSTALL COMPONENT 2B (ITEM 9) IN SOCKET X2B AFTER FLOW SOLDERING AND CLEANING.



207011-100

REV A

D & D MGR	1/29/82
ME MGR	2-10-82
DOC MGR	1-27-82
UL/CSA	2/1/82
FACR NO.	NONE

PART NUMBER: SEE SEPARATE M/L. Q-120

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVAL	DATE	DWN. L. SCHOTT 1/1/82	 <small>SAN DIEGO CALIF</small>
TOLERANCES ARE DECIMALS	MECH	2-1/82	CHK	
.X ±	ELEC	1/1/82	TITLE	PWB ASSY-MICROCOMPUTER EXPANDER
.XX ±	MFG	2/1/82	CODE IDENT	32274
.XXX ±	MATL	4/1/82	SIZE	C
ANGLES ±	QA B. DeRosier	1/27/82	DWG NO	207011-100
DO NOT SCALE DRAWING	MKTG	1/27/82	REV	A
	ISSUED	1/1/82	SCALE 1-1	MOD 40049-001 SH 1 OF 1

2. FOR SCHEMATIC REFERENCE SEE, DWG. 207011-200.

STAMP REVISION LETTER USING A PERMANENT AND LEGIBLE MARKING METHOD.

NOTES:

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DSC: R



ASSEMBLY PARTS LIST

S 7 0 1 1 207011 - 001 C

ASSY, PWB - MICROCOMPUTER EXPANDER DSC: R Q 120

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
					WHOLE	DECIMAL			
	207011 - 200	1	SCHEMATIC		0				
	207010 - 001	2	PROCESS BOARD		1				
	123192 - 001	3	I.C. P8035	1B	1				
	123045 - 001	4	I.C. 74LS175PCB	2A	1				
	123237 - 001	5	I.C. SN74LS373N	3A	1				
	102665 - 104	6	CAP., CER. 50v -20+80% 0.1uF	C1	1				
	137905 - 040	7	CONNECTOR - DIP PLUG	P10	1				
	146014 - 024	8	SOCKET - DIP, 24 CONTACTS	X2B	1				
	207028 - 001	9	ASSY, PROM 2K X 8	2B	1				
	150107 - 002	10	TAPE, URETHANE FOAM	1/16 x 3/8	4		06		
	207009 - 001								
	207009 - 001	13	PRINTED MASTER		0				
	207011 - 100	14	ASSY DWG		0				
PREPARED BY	Sue Redmond	DATE	1-14-82		DWG REL NO.	DATE			
CHECKED BY	H.P. 1/26/82				820287	21/1/82			
DESIGN ENGINEER	H.P. 1-28-82				207005-001				
					MODEL NO.	F420-30/90			
					REV	ECO	DATE / SIGNATURE	REV	ECO

FORM 798 (R 06/80)

PAGE 1 OF 2



ASSEMBLY PARTS LIST

S 7 0 1 1 207011 - 002 B

ASSY, PWB - MICROCOMPUTER EXPANDER Q120

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
					WHOLE	DECIMAL			
	207011 - 200	1	SCHEMATIC		0				
	207010 - 001	2	PROCESS BOARD		1				
	123192 - 001	3	I.C. P8035	1B	1				
	123045 - 001	4	I.C. 74LS175PCB	2A	1				
	123237 - 001	5	I.C. SN74LS373N	3A	1				
	102665 - 104	6	CAP., CER. 50v -20+80% 0.1uF	C1	1				
	137905 - 040	7	CONNECTOR - DIP PLUG	P10	1				
	146014 - 024	8	SOCKET - DIP, 24 CONTACTS	X2B	1				
	207028 - 002	9	ASSY, PROM 2K X 8	2B	1				
	150107 - 002	10	TAPE, URETHANE FOAM	1/16 x 3/8	4		06		
	207009 - 001								
	207009 - 001	13	PRINTED MASTER		0				
	207011 - 100	14	ASSY DWG		0				
PREPARED BY	S. HENCKE	DATE	01-17-83		DWG REL NO.	DATE			
CHECKED BY	S. HENCKE				820455	01/17/83			
DESIGN ENGINEER	R. B. 1/17/83				207005-003				
					MODEL NO.	F420-30/90			
					REV	ECO	DATE / SIGNATURE	REV	ECO

FORM 798 (R 03/82)

PAGE 1 OF 2

4

3

2

1

REVISIONS					207017-100 04
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
A	ENG. REL	LVS	9-25-81	CK 143-81	
01	PIL REL ERO 820309	KAM	9/28/81		
02	ECO 12179	KAM	11/2/81	A. Panta	
03	ECO 12243	JAZ	11/2/81	Pinault	
04	ECO 12461	KW	9/2/82	R. Shields	

(2) PWB

(18) APPLY .25 LONG UNDER
Q1-Q4. APPLY FIRMLY TO
PWB AFTER FLOW SOLDER

(14) HEADER

CUT OFF OR REMOVE
PIN 3 (KEY POSITION)

(16) 7 PLACES
TYP.

(15) TY-RAP
(2PLCS)

(17) CABLE ASSY

7 +24V
6 24VRET
5 KEY
4 +5V
3 5VRET
2 FWD
1 REV

ASSY 207017-001 REV

OBSOLETE
~~SUPERSEDED BY 207069-100~~
PER ECO 12461 9-1-82

HISTORICAL RECORD
DO NOT DESTROY

D & D MGR	11/12/81
ME MGR	11/12/81
DOC MGR	11/12/81
UL/CSA	11/1/81

PART NO. SEE
SEPARATE M/L

Q-120

STAMP REVISION LETTER USING A PERMANENT
AND LEGIBLE MARKING METHOD.


1. FOR SCHEMATIC REFERENCE SEE DWG 207017-200.

NOTES: UNLESS OTHERWISE SPECIFIED

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DSC: 7

UNLESS OTHERWISE
SPECIFIED DIMENSIONS
ARE IN INCHES
TOLERANCES ARE
DECIMALS
.X±
.XX±
.XXX±
ANGLES±
DO NOT SCALE
DRAWING

APPROVAL	DATE	DWN L. SCHOTT	9/21/81		SAN DIEGO CALIF
MECH <i>OK</i>	11-12-81	CHK <i>2/1/82</i>	11/25/81		
ELEC <i>OK</i>	11/17/81	TITLE			
MFG <i>Hand</i>	11/22/81	ASSY PWB			
MATL <i>Hand</i>	11/23/81	MOTOR DRIVER			
QA <i>OK</i>	11/24/81	CODE IDENT	SIZE	DWG NO	REV
MKTG <i>OK</i>	11/24/81	32274	C	207017-100	0
ISSUED <i>Hand</i>	11/24/81	SCALE 2:1	MOD 40011-001	SH 1	OF 1



ASSEMBLY TITLE	ASSY, PWB - MOTOR DRIVER	DSC:4	DSC CODE Q 120
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FORM 755 (R 09/80)

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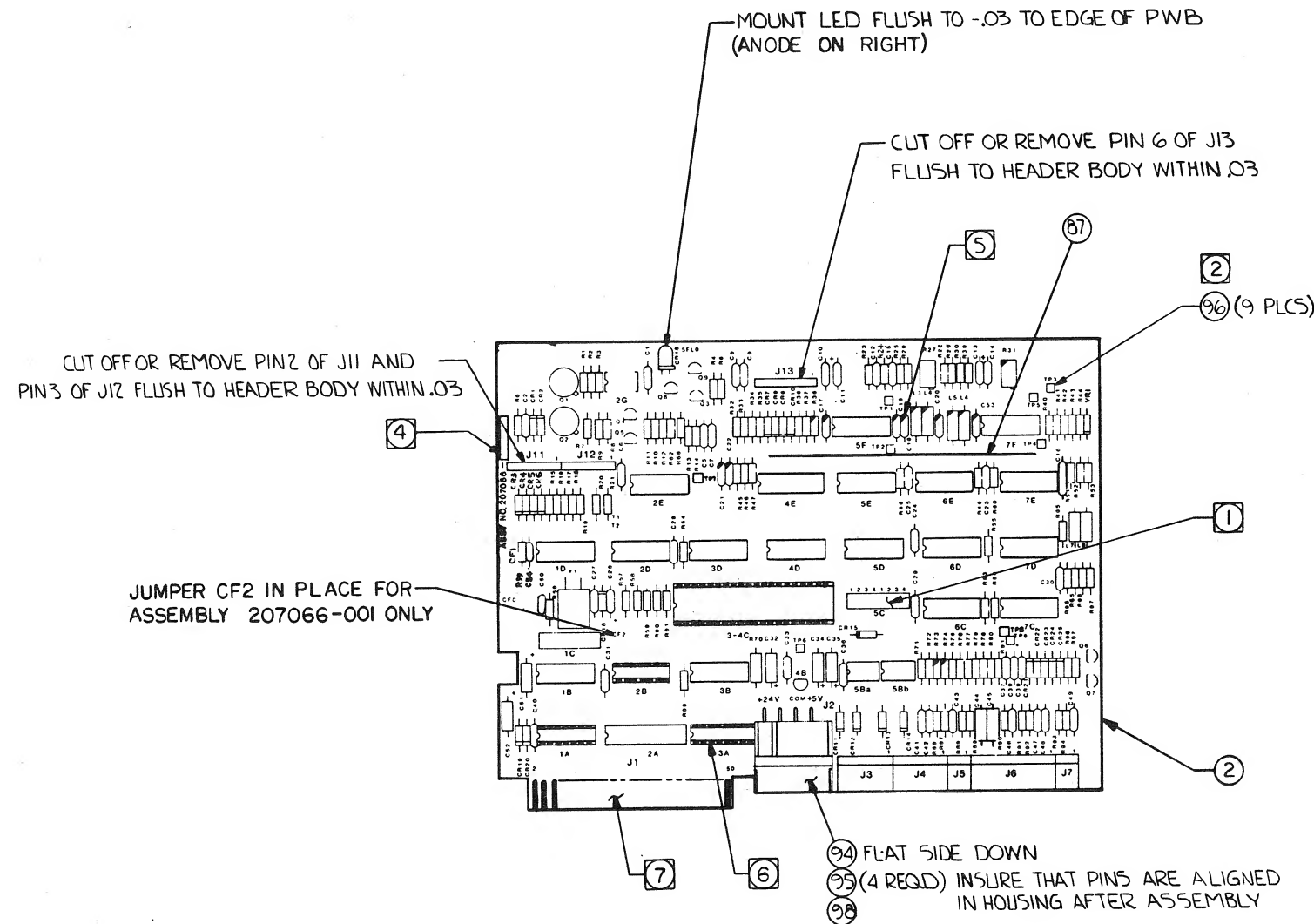


PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	

FORM 795B (R 09/80)

PAGE 2 OF 3

REVISIONS					207066-100B	
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
01	PILOT REL PER ERO 820372 W	KAM				
02	ECO 12436/A	Jad	KAM			
A	PROD. REL ERO 820421/A	KAM				
B	ECO 12642					



- 7 MASK CONNECTOR FINGERS PRIOR TO FLOW SOLDERING
- 3 INSTALL COMPONENTS 1A, 3A, 2B, 3C-4C IN SOCKETS AFTER FLOW SOLDERING AND CLEANING
- 2 COMPONENTS MARKED WITH TRIANGLE IN CORNER HAVE UNIQUE VALUES FOR EACH ASSEMBLY VERSION
- 4 MARK APPROPRIATE DASH NO. AND REVISION LETTER WHERE SHOWN USING .12 CHARACTERS PER CIPHER DATA SPEC 100037-001
3. REFERENCE SCHEMATIC DIAGRAM 207066-200
- 2 PRESS TEST POINT PIN INTO PWB PRIOR TO FLOW SOLDERING
- 1 INSTALL ITEM 97, JUMPER CLIPS ON PIN SETS 1 OF HEADER 5C

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED		DRAWN D. WILSON 3-5-82		CHECK <i>[Signature]</i> 6/7/82		APPR. <i>[Signature]</i> 6/7/82		MATERIAL		FINISH		MODEL No. 0420-30/90		NEXT ASSY		SCALE 1:1		SIZE D		207066-100		REV. B	
1. TOLERANCES XX± ANGULAR XXX±		2. BREAK ALL SHARP EDGES APPROX .010		3. MACH. SURFACES		4. ALL DIMS IN INCHES.		5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		DO NOT SCALE THIS DRAWING		CODE IDENT		52465		SHEET		OF					

cipher
data products, inc.

ASSEMBLY - PWB.
MAIN BOARD

ASSEMBLY TITLE		ASSY, PWB - MAIN - 90 IPS		DSC : R		BSC CODE		Q120	
19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE	
						WHOLE	DECIMAL		
	207066 - 200		1	SCHEMATIC		0			
	207065 - 001		2	PROCESS BOARD		1			
	207030 - 001		3	ASSY, PROM - 8 BIT MICROCOMPUTER	3-4C	1			
	123029 - 001		4	I.C. 74LS00	6E	1			
	123030 - 001		5	I.C. 74LS02	4D	1			
	123031 - 001		6	I.C. 74LS04	1B, 3B, 1D, 5D	4			
	123123 - 001		7	I.C. 74LS09	2D	1			
	123036 - 001		8	I.C. 74LS74	3D, 6D, 5E	3			
	123038 - 001		9	I.C. 74LS86	7C	1			
	123234 - 001		10	I.C. 74S240	2A	1			
	101139 - 001		11	I.C. 75451	2G	1			
	101031 - 001		12	I.C. 75452	5Ba, 5Bb	2			
	100331 - 001		13	I.C. 7406	7D	1			
	100234 - 001		14	I.C. 9602	4E	1			
PREPARED BY	Sue Redmond	DATE	3-5-82	A	PROD. G. 11. 20431A 11/12/82	F	12771A	DATE	3/2/83
CHECKED BY	Ken Makhlani	DATE	3/12/82	04	12521A 4/10/82 10:16	E	12728	DATE	3/6/83
DESIGN ENGINEER				03	12436A 3/31/82 8/31/82	D	12642	DATE	3/6/83
				02	12263A 4/10/82 4/10/82	C	12636	DATE	3/7/83
				01	12161A 3/10/82 3/10/82	B	12631	DATE	3/6/83
				REV	ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE
								207358	
								MODEL NO.	
								0420-90	

FORM 766 (R 03/90)

18	PART NUMBER	29	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M.	CODE		
						WHOLE	DECIMAL				
	100155	- 347	57	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 4.02K	R40,44	2					
	100155	- 351	58	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 4.42K	R32,33	2					
	100155	- 385	59	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 10K	R25,26,36,37,52	5					
	100155	- 415	60	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 20.5K	R53,95	2					
	100064	- 620	61	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 62	R70	1					
	142027	- 001	62	TERMINATOR-14 PIN 180/390 OHM	1A	1					
	142032	- 002	63	TERMINATOR-16 PIN 180/390 OHM	3A	1					
	138002	- 104	64	POTENTIOMETER $\frac{1}{2}w$, 100K	R27	1					
	138002	- 502	65	POTENTIOMETER $\frac{1}{2}w$, 5K	R31	1					
	102768	- 225	66	CAP., TANT. 10v $\pm 20\%$ 2.2uf	C28,38	2					
	102871	- 225	67	CAP., TANT. 20v $\pm 20\%$ 2.2uf	C34	1					
	102769	- 475	68	CAP., TANT. 35v $\pm 20\%$ 4.7uf	C32	1					
	102870	- 685	69	CAP., TANT. 4v $\pm 20\%$ 6.8uf	C11,13	2					
	102768	- 226	70	CAP., TANT. 10v $\pm 20\%$ 22uf	C35,51,52	3					
	102667	- 472	71	CAP., CER. 100v $\pm 10\%$.0047uf	C37, 54	2					
	102667	- 102	72	CAP., CER. 100v $\pm 10\%$.001uf	C43,46-49	5					
	102665	- 104	73	CAP., CER. 50v -20+80% .1uf	C1,5,7-10,12,14,15, 23-27,29-31,33,36 C39-42	23					
	-										
	102667	- 104	74	CAP., CER. 100v $\pm 10\%$.1uf	C44,45	2					
	102673	- 479	75	CAP., CER. 100v $\pm 10\%$ 4.7pf	C50	1					
	102669	- 200	76	CAP., CER. 100v $\pm 5\%$ 20pf	C2,C53	2					

FORM 755B (R 09/50)

PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
19	20				WHOLE	DECIMAL	10
MP	123239 - 001	15	I.C. LM319	7E	1		
MP	125011 - 001	16	I.C. LM339	6C	1		
MP	125017 - 015	17	I.C. MA78L15	4B	1		
MP	101032 - 001	18	I.C. NE592	5F, 7F	2		
MP	146014 - 014	19	SOCKET, DIP - 14 CONTACTS	2B, 1A	2		
MP	146014 - 016	20	SOCKET, DIP - 16 CONTACTS	3A	1		
MP	146014 - 040	21	SOCKET, DIP - 40 CONTACTS	3-4C	1		
MP	120909 - 003	22	HEADER, PROGRAM - DIP	2B	1		
MP	151032 - 001	23	TRANSISTOR, PNP Q2T2905	2E	1		
MP	151030 - 001	24	TRANSISTOR, NPN 2N3904	Q3-7	5		
MP	151033 - 001	25	TRANSISTOR, NPN MM3007	Q1, 2	2		
MP	107029 - 001	26	DIODE 1N4001	CR15	1		
MP	107201 - 001	27	DIODE 1N4150	CR1-14, CR18-25	22		
MP	107005 - 001	28	LED, INDICATOR MV5054-2	CR16	1		
MP	106500 - 114	29	CRYSTAL - 3.579545 MHz	Y1	1		
MP	101156 - 100	30	RESISTOR, $\frac{1}{2}W$ +5% 10	R23, 24	2		
MP	101156 - 330	31	RESISTOR, $\frac{1}{2}W$ +5% 33	R48	1		
MP	100155 - 164	32	RESISTOR, $\frac{1}{2}W$ +5% 49.9	R4	1		
MP	101156 - 121	33	RESISTOR, $\frac{1}{2}W$ +5% 120	R2, 3	2		
MP	101156 - 161	34	RESISTOR, $\frac{1}{2}W$ +5% 160	R90	1		
MP	101156 - 221	35	RESISTOR, $\frac{1}{2}W$ +5% 220	R54	1		

FORM 785B (R 09/0)

16	PART NUMBER	28 ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE 17	DECIMAL 18	
M P	102669 - 330	77	CAP., CER. 100v ±5% 33pf	C16,21,22	3		
M P	102669 - 101	81	CAP., CER. 100v +5% 100pf	C20	1		
M P	102669 - 391	82	CAP., CER. 100v +5% 390pf	C18,19	2		
M P	102669 - 301	83	CAP., CER. 100v +5% 300pf	C17	1		
M P	122502 - 001	84	INDUCTOR 10uh ±5% 290ma	L7,8	2		
M P	122502 - 008	85	INDUCTOR 270uh ±5% 129ma	L3,4	2		
M P	122502 - 004	86	INDUCTOR 120uh +5% 124ma	L5,6	2		
M P	102002 - 001	87	BUS BAR - VERTICAL		1		
M P	100143 - 002	88	PAD, TRANSISTOR TO-5	Use with Q1, Q2	2		
M P	120905 - 011	89	HEADER, DOUBLE ROW, STRAIGHT	5C	1		
M P	120916 - 001	90	HEADER, RIGHT ANGLE	J13	1		
M P	120916 - 002	91	HEADER, RIGHT ANGLE	J11,12	1		
M P	120915 - 024	92	HEADER, RIGHT ANGLE	J4-7	1		
M P	120915 - 007	93	HEADER, RIGHT ANGLE	J3	1		
M P	105084 - 001	94	CONNECTOR-HOUSING, 4 PIN	J2	1		
M P	106019 - 001	95	CONTACT, PIN	J2	4		
M P	100360 - 004	96	PIN, WIRE WRAP .025 SQ.	TF1-9, CF-0	11		
M P	104903 - 001	97	CLIP, JUMPER .025 SQ. POST	5C	2		
M P	100171 - 001	98	TY-RAP 1/16-1½	J2	1		
M P	101058 - 024	99	DIODE ZENER 1N5225B	VR1	1		
M P	-	100					

FORM 705B (R 09/80)

19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE		
						WHOLE	DECIMAL			
M P	101156	471	36	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 470	R56, 99	2				
M P	101156	511	37	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 510	R34,35,49,50,51	5				
M P	101156	681	38	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 680	R7,10,58,61	4				
M P	101156	102	39	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 1K	R13,16,18,41,42,47, 55,73,74,87,89	11				
M P	101156	122	40	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 1.2K	R80	1				
M P	101156	152	41	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 1.5K	R69	1				
M P	101156	272	42	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 2.7K	R97	1				
M P	101156	302	43	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 3K	R38	1				
M P	101156	392	44	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 3.9K	R98	1				
M P	101156	472	45	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 4.7K	R57,59,60,79,81	5				
M P	101156	682	46	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 6.8K	R14,15,17,19,20	5				
M P	101156	103	47	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 10K	R64,65,67,71,75,76,78, 86,88,92,93,96	12				
M P	101156	203	48	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 20K	R43	1				
M P	101156	303	49	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 30K	R46	1				
M P	101156	333	50	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 33K	R28,30	2				
M P	101156	473	51	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 47K	R91,94	2				
M P	101156	104	52	RESISTOR, $\frac{1}{2}w$ $\pm 5\%$ 100K	R63,66,72,77	4				
M P	100155	181	53	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 75	R1	1				
M P	100155	232	54	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 255	R5	1				
M P	100155	254	55	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 432	R8	1				
M P	100155	289	56	RESISTOR, $\frac{1}{2}w$ $\pm 1\%$ 1K	R29,39	2				

FORM 785B (R 09/8)

[illegible]

FORM 755B (R 09/80)

elpher ASSEMBLY PARTS LIST Garden Grove Division 207066 - 003 REV G S 7 0 1 1 207066 - 003 ASSY, PWB - MAIN - 30 IPS DSC:R 0120

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207066 - 200	1	SCHEMATIC		0		
207065 - 001	2	PROCESS BOARD		1		
940222 - 001	3	ASSY, 8 BIT MICROCOMPUTER (MASKED ROM VERSION)	3-4C (207030 - 002 Alternate)	1		
123029 - 001	4	I.C. 74LS00	6E	1		
123030 - 001	5	I.C. 74LS02	4D	1		
123031 - 001	6	I.C. 74LS04	1B, 3B, 1D, 5D	4		
123123 - 001	7	I.C. 74LS09	2D	1		
123036 - 001	8	I.C. 74LS74	3D, 6D, 5E	3		
123038 - 001	9	I.C. 74LS86	7C	1		
123234 - 001	10	I.C. 74S240	2A	1		
101139 - 001	11	I.C. 75451	2G	1		
101031 - 001	12	I.C. 75452	5Ba, 5Bb	2		
100331 - 001	13	I.C. 7406	7D	1		
100234 - 001	14	I.C. 9602	4E	1		

FORM 785 (R 03/82) PAGE 1 OF 7

elpher ASSEMBLY PARTS LIST (CONTINUATION) Garden Grove Division 207066 - 003 REV G S 7 0 1 1 207066 - 003

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
123239 - 001	15	I.C. LM319	7E	1		
125011 - 001	16	I.C. LM339	6C	1		
125017 - 015	17	I.C. MA78L15	4B	1		
101032 - 001	18	I.C. NE592	5F, 7F	2		
146014 - 014	19	SOCKET, DIP - 14 CONTACTS	2B, 1A	2		
146014 - 016	20	SOCKET, DIP - 16 CONTACTS	3A	1		
146014 - 040	21	SOCKET, DIP - 40 CONTACTS	3-4C	1		
120909 - 003	22	HEADER, PROGRAM - DIP	2B	1		
151032 - 001	23	TRANSISTOR PNP Q2T2905	2E	1		
151030 - 001	24	TRANSISTOR NPN 2N3904	Q3-7	5		
151033 - 001	25	TRANSISTOR NPN MM3007	Q1,2	2		
107029 - 001	26	DIODE 1N4001	CR15	1		
107201 - 001	27	DIODE 1N4150	CR1-14, CR18-25	22		
107005 - 001	28	LED, INDICATOR MV5054-2	CR16	1		
106500 - 114	29	CRYSTAL - 3.579545 MHz	Y1	1		
101156 - 100	30	RESISTOR, 1/4W ±5% 10	R23,24	2		
101156 - 330	31	RESISTOR, 1/4W ±5% 33	R48	1		
100155 - 164	32	RESISTOR, 1/4W ±5% 49.9	R4	1		
101156 - 121	33	RESISTOR, 1/4W ±5% 120	R2,3	2		

FORM 785 (R 03/82) (Continuation) PAGE 2 OF 7

elpher ASSEMBLY PARTS LIST (CONTINUATION) Garden Grove Division 207066 - 003 REV G S 7 0 1 1 207066 - 003

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
101156 - 161	34	RESISTOR, 1/4W ±5% 160	R9D	1		
101156 - 221	35	RESISTOR, 1/4W ±5% 220	R54	1		
101156 - 471	36	RESISTOR, 1/4W ±5% 470	R56,99	2		
101156 - 511	37	RESISTOR, 1/4W ±5% 510	R34,35,49,50,51	5		
101156 - 681	38	RESISTOR, 1/4W ±5% 680	R7,10,58,61	4		
101156 - 102	39	RESISTOR, 1/4W ±5% 1K	R13,16,18,38,41,42, 47,55,87,89	10		
101156 - 122	40	RESISTOR, 1/4W ±5% 1.2K	R80	1		
101156 - 152	41	RESISTOR, 1/4W ±5% 1.5K	R69	1		
101156 - 272	42	RESISTOR, 1/4W ±5% 2.7K	R97	1		
101156 - 332	43	RESISTOR, 1/4W ±5% 3.3K	R73,74	2		
101156 - 392	44	RESISTOR, 1/4W ±5% 3.9K	R98	1		
101156 - 472	45	RESISTOR, 1/4W ±5% 4.7K	R57,59,60,79,81	5		
101156 - 682	46	RESISTOR, 1/4W ±5% 6.8K	R14,15,17,19,20	5		
101156 - 103	47	RESISTOR, 1/4W ±5% 10K	R64,65,67,71,75,76,78, 86,88,92,93,96	12		
101156 - 203	48	RESISTOR, 1/4W ±5% 20K	R43	1		
101156 - 303	49	RESISTOR, 1/4W ±5% 30K	R46	1		
101156 - 333	50	RESISTOR, 1/4W ±5% 33K	R28,30	2		
101156 - 473	51	RESISTOR, 1/4W ±5% 47K	R91,94	2		
101156 - 104	52	RESISTOR, 1/4W ±5% 100K	R63,66,72,77	4		

FORM 785 (R 03/82) (Continuation) PAGE 3 OF 7

elpher ASSEMBLY PARTS LIST (CONTINUATION) Garden Grove Division 207066 - 003 REV G S 7 0 1 1 M P 207066 - 003

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
100155 - 181	53	RESISTOR, 1/4W ±1% 75	R1	1		
100155 - 232	54	RESISTOR, 1/4W ±1% 255	R5	1		
100155 - 254	55	RESISTOR, 1/4W ±1% 432	R8	1		
100155 - 289	56	RESISTOR, 1/4W ±1% 1K	R29,39	2		
100155 - 347	57	RESISTOR, 1/4W ±1% 4.02K	R40,44	2		
100155 - 351	58	RESISTOR, 1/4W ±1% 4.42K	R32,33	2		
100155 - 385	59	RESISTOR, 1/4W ±1% 10K	R25,26,36,37,52	5		
100155 - 415	60	RESISTOR, 1/4W ±1% 20.5K	R53,95	2		
100064 - 620	61	RESISTOR, 1/4W ±5% 62	R70	1		
142027 - 001	62	TERMINATOR - 14 PIN 180/390 OHM	1A	1		
142032 - 002	63	TERMINATOR - 16 PIN 180/390 OHM	3A	1		
138002 - 104	64	POTENTIOMETER 1/4W 100K	R27	1		
138002 - 202	65	POTENTIOMETER 1/4W 2K	R31	1		
102768 - 225	66	CAP., TANT. 10v ±20% 2.2uf	C28,38	2		
102871 - 225	67	CAP., TANT. 20v ±20% 2.2uf	C34	1		
102769 - 475	68	CAP., TANT. 35v ±20% 4.7uf	C32	1		
102870 - 685	69	CAP., TANT. 4v ±20% 6.8uf	C11,13	2		
102768 - 226	70	CAP., TANT. 10v ±20% 22uf	C35,51,52	3		
102667 - 472	71	CAP., CER. 100v ±10% .0047uf	C37, 54	2		

FORM 785 (R 03/82) (Continuation) PAGE 4 OF 7

elpher ASSEMBLY PARTS LIST (CONTINUATION) Garden Grove Division 207066 - 003 REV G S 7 0 1 1 M P 207066 - 003

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
102667 - 102	72	CAP., CER. 100v ±10% .001uf	C43,46-49	5		
102665 - 104	73	CAP., CER. 50v ±20+80% .1uf	C1,5,7-10,12,14,15, 23-27,29-31,33,36,39-42	23		
102667 - 104	74	CAP., CER. 100v ±10% .1uf	C44,45	2		
102673 - 479	75	CAP., CER. 100v ±10% 4.7pf	C50	1		
102669 - 200	76	CAP., CER. 100v ±5% 20pf	C2	1		
102669 - 330	77	CAP., CER. 100v ±5% 33pf	C16	1		
102669 - 620	78	CAP., CER. 100v ±5% 62pf	C53	1		
102669 - 101	79	CAP., CER. 100v ±5% 100pf	C22	1		
102669 - 131	80	CAP., CER. 100v ±5% 130pf	C21	1		
102669 - 301	81	CAP., CER. 100v ±5% 300pf	C20	1		
102669 - 122	82	CAP., CER. 100v ±5% 1200pf	C18,19	2		
102669 - 302	83	CAP., CER. 100v ±5% 3000pf	C17	1		
122502 - 001	84	INDUCTOR, 10uh ±5% 290ma	L7,8	2		
122502 - 010	85	INDUCTOR, 820uh ±5% 77ma	L3,4	2		
122502 - 009	86	INDUCTOR, 360uh ±5% 108ma	L5,6	2		
102002 - 001	87	BUS BAR - VERTICAL		1		
100143 - 002	88	PAD, TRANSISTOR T0-5	Use with Q1, Q2	2		
120905 - 011	89	HEADER, DOUBLE ROW, STRAIGHT	5C	1		
120916 - 001	90	HEADER, RIGHT ANGLE	J13	1		

FORM 785 (R 03/82) (Continuation) PAGE 5 OF 7

elpher ASSEMBLY PARTS LIST (CONTINUATION) Garden Grove Division 207066 - 003 REV G S 7 0 1 1 M P 207066 - 003

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
120916 - 002	91	HEADER, RIGHT ANGLE	J11,12	1		
120915 - 024	92	HEADER, RIGHT ANGLE	J4-7	1		
120915 - 007	93	HEADER, RIGHT ANGLE	J3	1		
105084 - 001	94	CONNECTOR-HOUSING, 4 POS.	J2	1		
106019 - 001	95	CONTACT-PIN	J2	4		
100360 - 004	96	PIN, WIRE WRAP .025 SQ.	TP1-9, CF-0	1		
104903 - 001	97	CLIP, JUMPER .025 SQ. POST	5C	2		
100171 - 001	98	TY-RAP 1/16-1/4	J2	1		
101058 - 024	99	DIODE, ZENER 1N5225B	VR1	1		
164021 - 926	100	WIRE, HOOKUP 26 AWG	CF2	2	05	
207066 - 100	101	ASSEMBLY DRAWING		0		
207064 - 001	102	PRINTED MASTER		0		
100377 - 002	113	PIN		2		
900908 - 001	114	TEST PROCEDURE	SELECT R45	0		
-						
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FORM 785 (R 03/82) (Continuation) PAGE 6 OF 7



10000000

ASSEMBLY TITLE:	ASSY, PWB - MAIN - 90 IPS	DSC: R	DOC CODE:	0120	S 7 0 1 1	207066 - 004	G
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		Q120		ASSEMBLY PART NUMBER
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FORM 795 (R 03/82) PAGE 1 OF 1

FORM 795 (R 03/82) PAGE 1 OF 1



(CONTINUATION)

1000

FORM 795 (R 03/82) (Continuation) PAGE 6 OF 7

FORM 795 (R 03/82) (Continuation) PAGE 6 OF 7



QUANTITY	UNIT	PRICE	TOTAL
11.34			

PAGE 3 OF 7

PAGE 3 OF 7



(CONTINUATION)

Garden Grove Station		(CONTINUATION)	
			QUANTITY
			11.00

FORM 786 (R 03/02) (Continuation) PAGE 4 OF 7

FORM 786 (R 03/02) (Continuation) PAGE 4 OF 7



(CONTINUATION)

[illegible]

FORM 706 (R 03/02) (Continuation) PAGE 3 OF 7

FORM 706 (R 03/02) (Continuation) PAGE 3 OF 7



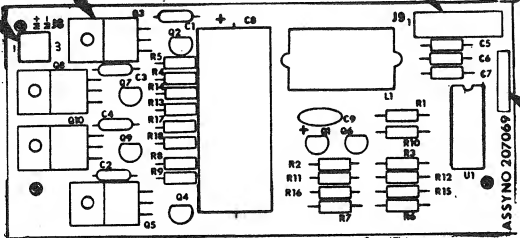
(CONTINUATION)

ITEM NO.	DESCRIPTION	QUANTITY	U.M.
		WHOLE	DECIMAL
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Form 100 (11 series) (2-2000)

Form 100 (11 series) (2-2000)

REVISIONS				207069-100	B
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT RELEASE PER ERO 820361	KW	5-11-82		
02	ECO 12303	KM	KAM	6-10-82	<i>Thurman</i>
03	ECO 12382	Jaz	KAM	5-13-82	<i>R.R.H.</i>
04	ECO 12441	Jaz	KAM	9-26-82	<i>Alb</i>
A	PROD. REL ERO 820421/A	Kam	12/19/82		
B	ECO 12592	Kam	2-3-83		<i>Alb</i>



OBsolete


REPLACED BY: 207076-100
 C/O #: 12592
 DATE: 2-1-83

HISTORICAL RECORD
 DO NOT DESTROY

- ⑤ CUT OFF PIN 6 (KEY POSITION) WITHIN .030
- ④ CUT OFF PIN 1 (KEY POSITION) WITHIN .030
- 3. REFERENCE SCHEMATIC DRAWING 207069-200
- ② APPLY .25 INCH LONG DOUBLE BACK TAPE UNDER Q3, Q5, Q8, Q10. APPLY FIRMLY TO PWB AFTER FLOW SOLDER.
- ① MARK APPROPRIATE DASH NO. AND REVISION LETTER WHERE SHOWN USING .12 INCH HIGH CHARACTERS PER CIPHER DATA SPEC. 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED		DRAWN	DON WILSON	MAY 6-82		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.	
1. TOLERANCES XX± ANGULAR XXX± ±		CHECK	<i>Don Mahan</i>	5/13/82			
2. BREAK ALL SHARP EDGES APPROX. .010		APPR.	<i>R.L. Field</i>	5/13/82			
3. MACH. SURFACES		MATERIAL			ASSEMBLY-PWB, MOTOR DRIVER		CODE Q 120
4. ALL DIMS IN INCHES.		FINISH					QTY REQ'D 1
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		MODEL No. QUARTERBACK			SCALE 1:1	SIZE C	REV. B
DSC:R		NEXT ASSY 207358 & 207359			DO NOT SCALE THIS DRAWING	CODE IDENT	52465
					SHEET	1	OF 1

alber HISTORICAL RECORD ASSEMBLY PARTS LIST

DO NOT DESTROY

ASSEMBLY TYPE: ASSY, PWB-MOTOR DRIVER

DOC CODE: Q120

87011 207069 -- 001

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207068 -- 001	1	PROCESS BOARD		1		
100336 -- 001	3	I.C. 7438		1		
	4					
151027 -- 002	5	TRANSISTOR, NPN TIPL20		2		
151028 -- 002	6	TRANSISTOR, PNP TIPL25		2		
151030 -- 001	7	TRANSISTOR, NPN 2N3904		4		
151031 -- 001	8	TRANSISTOR, PNP 2N3906		2		
	9					
101156 -- 101	10	RESISTOR, 1/4W ± 5% 100	R5,R9,R14,R18	4		
101156 -- 561	11	RESISTOR, 1/4W ± 5% 560	R7,R16	2		
101156 -- 392	12	RESISTOR, 1/4W ± 5% 3.9K	R1,R2,R6,R10,R11,R15	6		
101156 -- 682	13	RESISTOR, 1/4W ± 5% 6.8K	R4,R8,R13,R17	4		
101156 -- 103	14	RESISTOR, 1/4W ± 5% 10K	R3,R12	2		

OBSOLETE

REPLACED BY: 207076-001

CR/O #: 12592

DATE: 2-1-83

PREPARED BY: Howard A. Bennett DATE: 4-6-82 0412494 R. Bennett 11/1/82

CHECKED BY: H. A. Bennett 4/6/82 0312441 R. Bennett 11/1/82

DESIGN ENGINEER: H. A. Bennett 5/13/82 0212588 R. Bennett 8-15-82 12592 R. Bennett 9-15-82

01, 12592 H. A. Bennett 11-10-82 ELO 820421 12/8/82

01 P.L. REL. R. A. REL.

REV ECO DATE / SIGNATURE REV ECO DATE / SIGNATURE

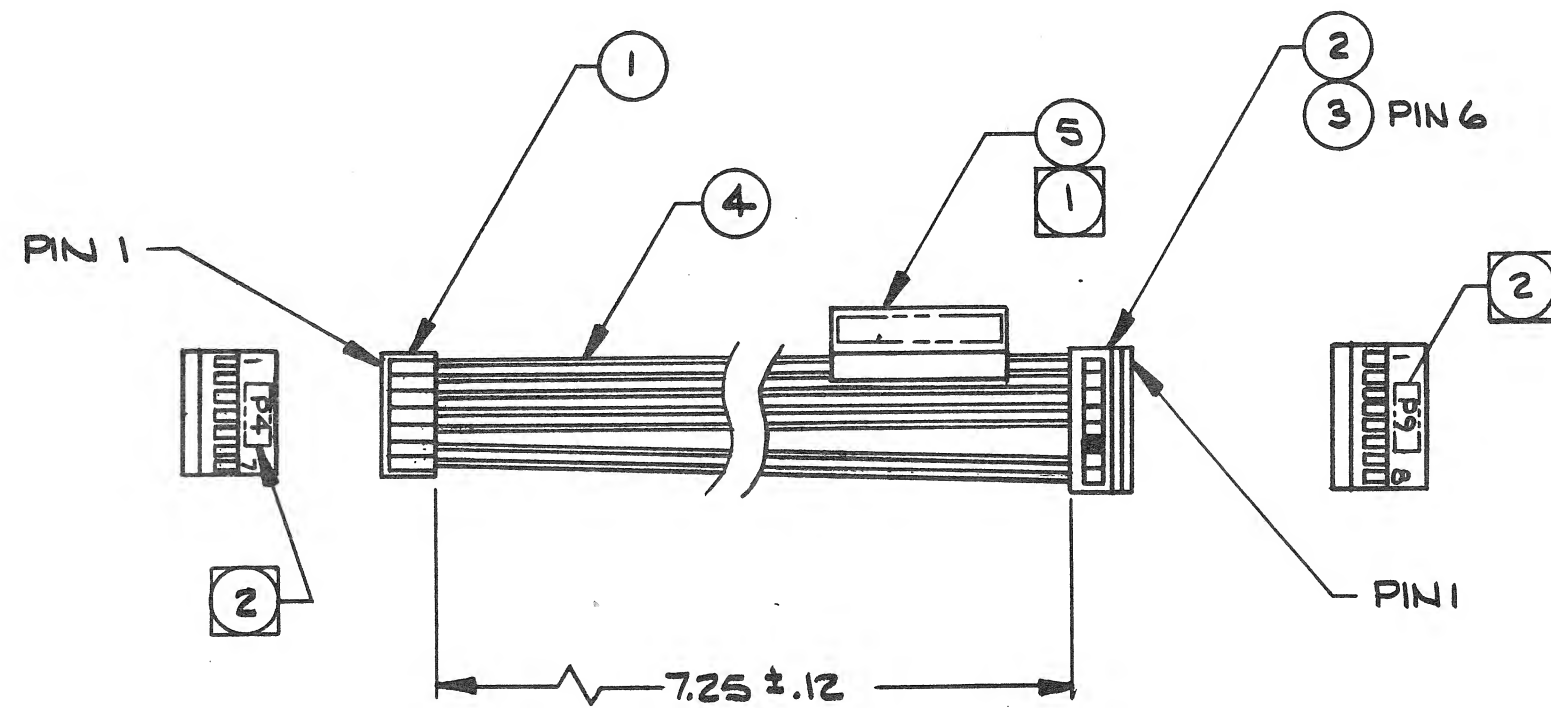
QUARTERBACK

alber ASSEMBLY PARTS LIST (CONTINUATION)

87011 207069 -- 001

PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
	15					
102608 -- 108	16	CAP, ELEC 35V-10% + 50% 1000uf	C8	1		
102665 -- 104	17	CAP, CER. 50V-20 + 80% .1uf	C5,C6,C7	3		
102667 -- 103	18	CAP, CER. 100V ± 10% .01uf	C1,C2,C3,C4	4		
	19					
122522 -- 001	20	INDUCTOR, HIGH CURRENT FILTER ± 10% 100uh	L1	1		
	21					
120917 -- 003	22	HEADER, STRAIGHT 3-PIN	J8	1		
120917 -- 008	23	HEADER, STRAIGHT 8-PIN	J9	1		
	24					
150107 -- 001	25	TAPE, DOUBLE COATED POLYURETHANE FOAM	Q3,Q5,Q8,Q10	1	0.6	
207069 -- 200	26	SCHEMATIC	REF	0		
207069 -- 100	27	ASSY. DWG	REF	0		
207067 -- 001	28	MASTER ARTWORK	REF	0		
	29					
	30					
	31					
	32					
	33					

REVISIONS				207070-100	A
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT REL PER ERO 820368	KAM	—	—	
A	PROD. REL ERO 820421/A	Kam	12/14/82	—	




P4				P9
1	—	S REV	—	1
2	—	S FWD	—	2
3	—	+5 RET	—	3
4	—	+5V	—	4
5	—	OL	—	5
		KEY		6
6	—	+24 RET	—	7
7	—	+24V	—	8

- 2 MARK CONNECTORS WITH APPROPRIATE REF DESIGNATION USING .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
- 1 MARK WITH PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

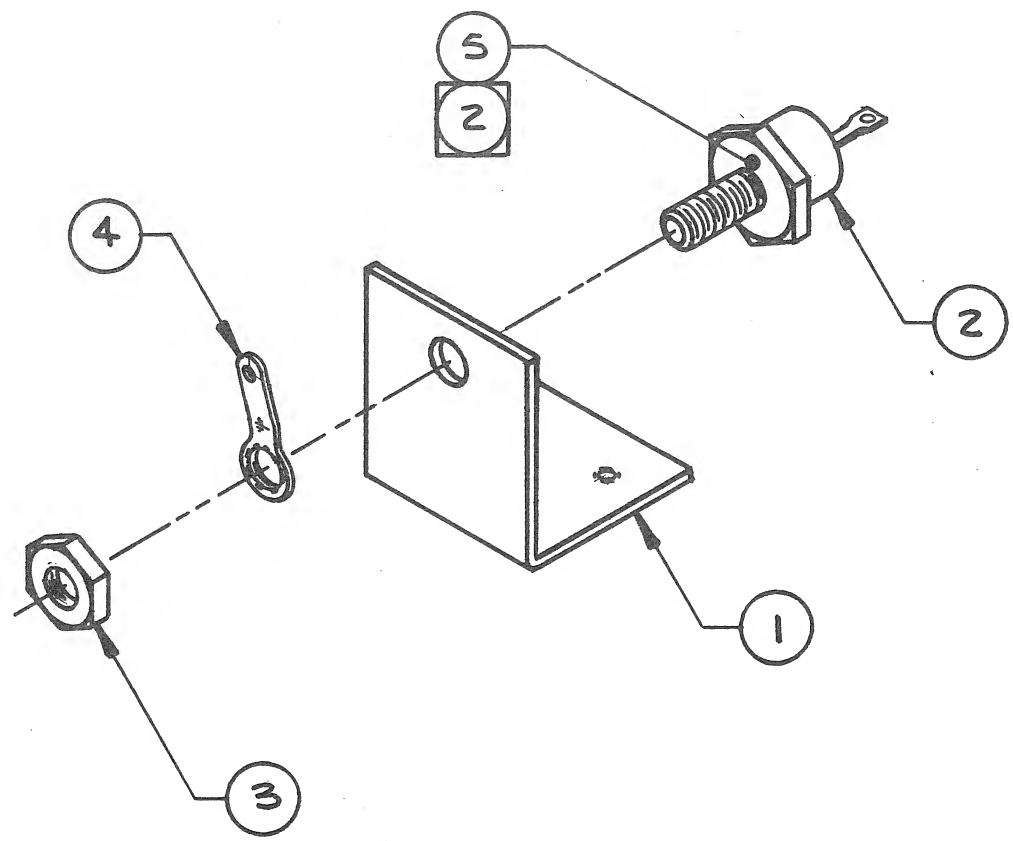
NOTES UNLESS SPECIFIED		DRAWN MATTHES 5/24/82		 Garden Grove Division		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	
1. TOLERANCES .XX ± — ANGULAR .XXX ± — ± — 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES — ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		CHECK Kam Mahrawi 6/1/82 APPR. [Signature] 6/1/82					
DSC: R		MATERIAL		ASSY, CABLE-MOTOR DRIVER PWB, 90 IPS		QTY REQD. 1	
		FINISH		SCALE 1/1		REV. A	
		MODEL No. QB		SIZE B		207070-100	
		NEXT ASSY		DO NOT SCALE THIS DRAWING		CODE IDENT	
						SHEET 1 OF 1	



ASSEMBLY TITLE	DOC CODE
ASSY. CABLE - MOTOR DRIVER PWB, 90 IPS	Q115

[illegible]

REVISIONS				207072-100	A
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT REL PER ERO 820368	KAM	—	—	
A	PROD. REL ERO 820421/A	Kam	12/14/82	—	




PART NUMBER SEE SEPARATE M/L

- 2

APPLY ITEM 5 (THERMAL COMPOUND) TO BASE OF ITEM 2 (DIODE) BEFORE INSTALLATION.

1. BAG & TAG PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

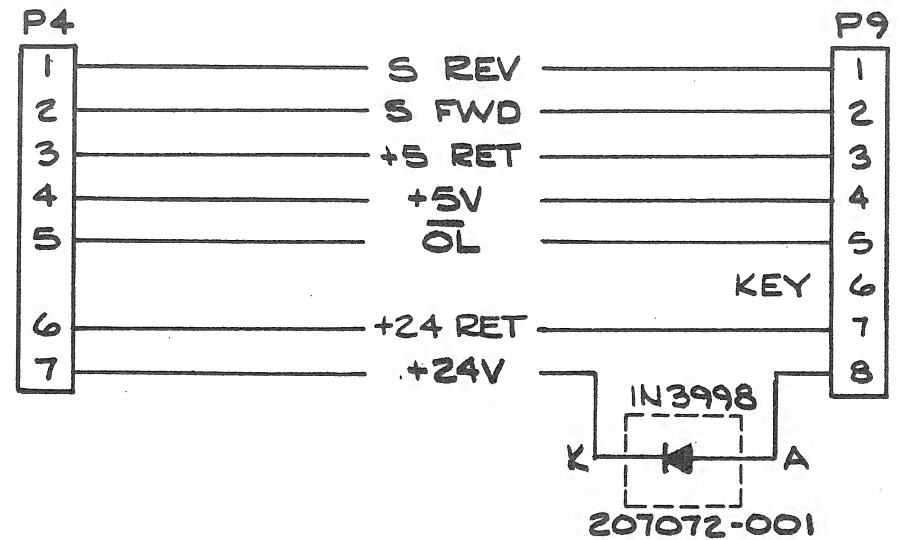
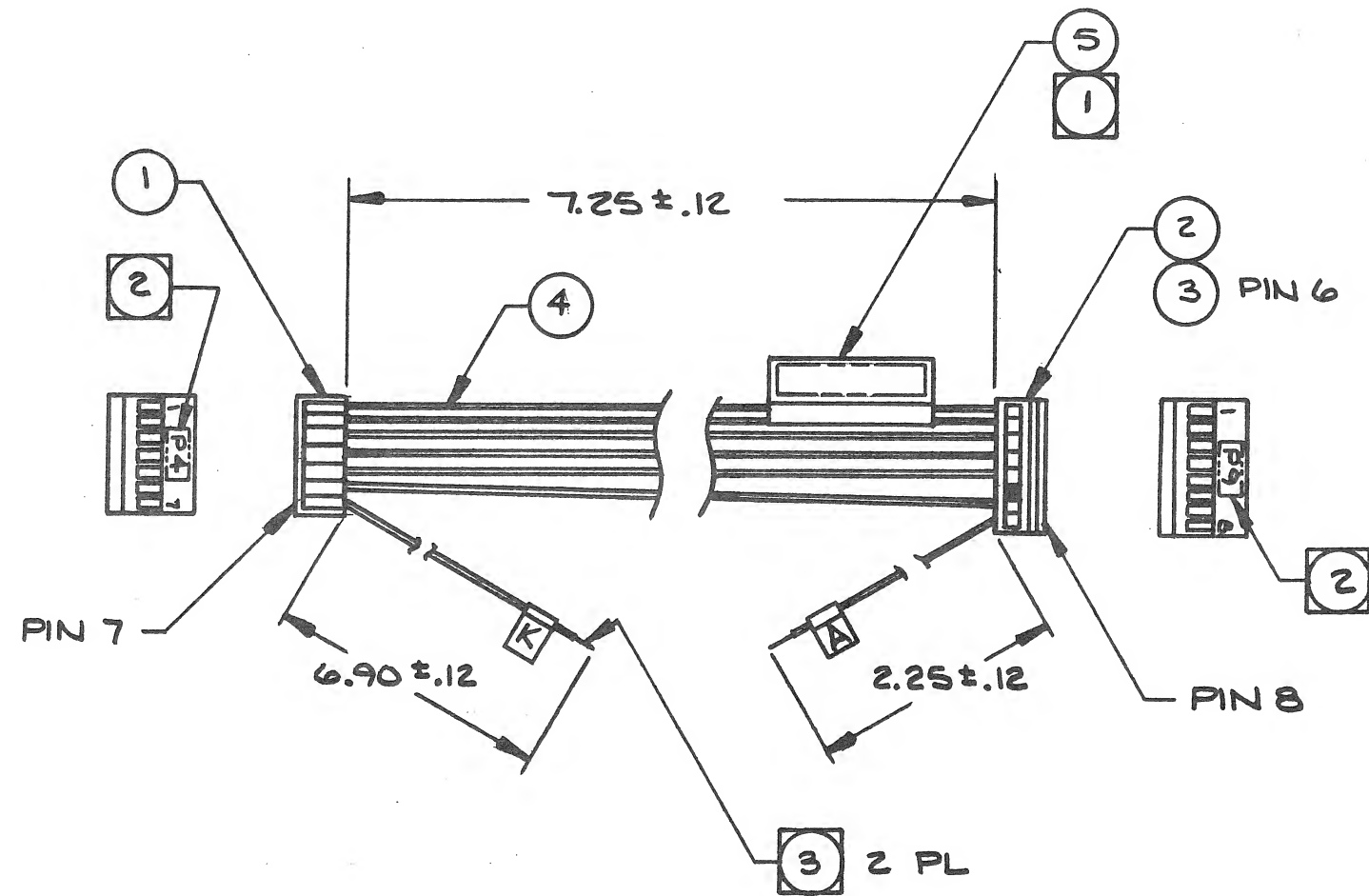
NOTES UNLESS SPECIFIED 1. TOLERANCES .XX± ——— ANGULAR .XXX± ——— ± ——— 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES —✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DRAWN	MATTHES	5/26/82	 Garden Grove Division	THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.					
	CHECK	Kam Makhlawi	6/1/82							
	APPR.	G. Perez	6/14/82							
	MATERIAL				ASSY, DIODE - SLOW SPEED MOTOR KIT, 30 IPS	CODE				
	FINISH					Q				
MODEL No.	QB			SCALE	1/1	SIZE	B	207072-100	REV.	A
NEXT ASSY				DO NOT SCALE THIS DRAWING	CODE IDENT		SHEET 1 OF 1			



ASSEMBLY TITLE	DSC CODE	DOC CODE
ASSY, DIODE - MOTOR DRIVER, 30 IPS	DSC:R	Q100

[illegible]

REVISIONS				207073-100	A
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
01	PILOT REL PER ERO 820368	KAM	—	—	
A	PROD. REL ERO 820421/A	Kam	12/14/82	—	



- ③ STRIP WIRE ENDS BACK .19 AND LABEL AS SHOWN.
- ② MARK CONNECTORS WITH APPROPRIATE REF DESIGNATION USING .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
- ① MARK WITH PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED		DRAWN MATTHES 5/26/82		 Garden Grove Division		THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE CIPHER DATA PRODUCTS, INC.	
1. TOLERANCES .XX ± — ANGULAR .XXX ± — ± — 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES ✓ 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		CHECK Kam Mahajan 6/1/82 APPR. G. Perez 4/4/82 MATERIAL FINISH MODEL No. QB NEXT ASSY					
DSC : R		SCALE 1/1		SIZE B		207073-100	
		DO NOT SCALE THIS DRAWING		CODE IDENT		SHEET 1 OF 1	



5		U2		61		REV
S 7 0 1 1		M P		207073 - 001		A
ASSEMBLY PARTS NUMBER						

ASSEMBLY TITLE	DOC CODE
ASSY. CABLE - MOTOR DRIVER PWB, 30 IPS	Q115

[illegible]



S 7 0 1 1	M P	207076 — 001	REV D
ASSEMBLY PARTS NUMBER			

ASSEMBLY TITLE	MOTOR DRIVER	Dsc: R	DOC CODE Q 120
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		PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
	19	28				WHOLE 12	DECIMAL 18	
M P	-	1						
M P	207075- 001	2	BOARD, PROCESS			1		
M P	-	3						
M P	-	4						
M P	102665- 104	5	CAPACITOR, 50V., .1UF	C3, C4, C10, C11, C17		5		
M P	102667- 103	6	CAPACITOR, 10%, 100V., .01UF	C7, C12, C14, C16		4		
M P	102667- 104	7	CAPACITOR, 10%, 100V., .1UF	C13		1		
M P	102667- 183	8	CAPACITOR, 10%, 100V., .018UF	C8		1		
M P	102668- 472	9	CAPACITOR, 5%, 50V., .0047UF	C2, C5		2		
M P	102667- 473	10	CAPACITOR, 10%, 100V., .0047UF	C1		1		
M P	102608- 108	11	CAPACITOR, 35V, 1000UF	C6		1		
M P	102768- 106	12	CAPACITOR, 20%, 10V, 10UF	C9, C15		2		
M P	-	13						
M P	-	14						

PREPARED BY T.A. Lindman	DATE 6-29-82	C 12616 B R.R. 7/5/82				DWG REL NO. 820426	DATE 10 06 82
CHECKED BY Kay Mahbani	7/9/82	B 12595K PRO. REC 12/1/82				NEXT ASSEMBLY	M M D D Y Y
DESIGN ENGINEER R. R. Nica	10/6/82	A 820448 12/2/82					
		OI FILE REL 12/1/82					
		X1					
	REV ECO	DATE / SIGNATURE	REV ECO	DATE / SIGNATURE			
			D 12738	R. R. Nica 7/27/83			

FORM 785 (R 09/80)

PAGE 1 OF 5



1	5	52	61	REV
S 7 0 1 1	M P	207076-001	D	
ASSEMBLY PART NUMBER				

PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U. M. CODE
19	28				WHOLE 12	DECIMAL 18	
M P	—	15					
M P	122522— 001	16	INDUCTOR, HIGH CURRENT 100 μ h \pm 10%	L1	1		
M P	—	17					
M P	107201— 001	18	DIODE, 1N4150	CR1, CR2	2		
M P	—	19					
M P	104903 001	20	CLIP, JUMPER	J10	1		
M P	100360— 001	21	PIN, WIRE WRAP, .025SQ	J10	3		
M P	120917— 008	22	HEADER, .100CTR, 8 POSITION	J9	1		
M P	120917— 003	23	HEADER, .100CTR, 3 POSITION	J8	1		
M P	—	24					
M P	123079— 001	25	I. C. 74LS38	U2	1		
M P	123248— 001	26	I. C. 74LS136	U3	1		
M P	125044— 001	27	I. C. LM358	U1, U5	2		
M P	125043— 001	28	I. C. NE556	U4	1		
M P	123029— 001	29	I. C. 74LS00	U6	1		
M P	—	30					
M P	100155— 270	31	RESISTOR, 1%, 1/4W, 634	R44	1		
M P	100155— 289	32	RESISTOR, 1%, 1/4W, 1K	R15, R21, R30	3		
M P	100155— 314	33	RESISTOR, 1%, 1/4W, 1.82K	R35	1		

FORM 796 (R 03/82) (Continuation)

PAGE 2 OF 5



S 7 0 1 1	M P	207076--001	RE D
ASSEMBLY PART NUMBER			

19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
						WHOLE	DECIMAL	
						12	18	
M P	100155_ 318	34		RESISTOR,1%,1/4W,2K	R40	1		
M P	100155_ 334	35		RESISTOR,1%,1/4W,2.94K	R17	1		
M P	100155_ 347	36		RESISTOR,1%,1/4W,4.02K	R18,R23	2		
M P	100155_ 385	37		RESISTOR,1%,1/4W,10K	R29,R42	2		
M P	100155_ 444	38		RESISTOR,1%,1/4W,41.2K	R10	1		
M P	100155_ 452	39		RESISTOR,1%,1/4W,49.9K	R12,R34	2		
M P	100155_ 460	40		RESISTOR,1%,1/4W,60.4K	R31	1		
M P	100155_ 477	41		RESISTOR,1%,1/4W,90.9K	R7	1		
M P	100155_ 481	42		RESISTOR,1%,1/4W,100K	R5,R9,R14,R38	4		
M P	100155_ 548	43		RESISTOR,1%,1/4W,499K	R8,R39	2		
M P	101156_ 101	44		RESISTOR,5%,1/4W,100	R16,R25,R28,R37	4		
M P	101156_ 102	45		RESISTOR,5%,1/4W,1K	R47	1		
M P	101156_ 103	46		RESISTOR,5%,1/4W,10K	R2,R36	2		
M P	101156_ 122	47		RESISTOR,5%,1/4W,1.2K	R13	1		
M P	101156_ 202	48		RESISTOR,5%,1/4W,2K	R1	1		
M P	101156_ 203	49		RESISTOR,5%,1/4W,20K	R43,R46	2		
M P	101156_ 392	50		RESISTOR,5%,1/4W,3.9K	R4,R6,R20,R26,R27,R32	6		
M P	101156_ 561	51		RESISTOR,5%,1/4W,560	R22,R33	2		
M P	101156_ 682	52		RESISTOR,5%,1/4W,6.8K	R19,R24,R41,R45	4		

FORM 795 (R 03/82) (Continuation)

PAGE 3 OF 3



S 7 0 1 1	M P	207076 - 001	D
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ASSEMBLY PART NUMBER

Garden Grove Division		(CONTINUATION)		QUANTITY		U.M. CODE	
PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	WHOLE	DECIMAL	
19	28				12	16	
M P	101156- 752	53	RESISTOR,5%,1/4W,7.5K	R3	1		
M P	142033- 001	54	RESISTOR,1%,1W,0.1	R11	1		
M P	-	55					
M P	-	56					
M P	151027- 002	57	TRANSISTOR TIP120	Q5,Q7	2		
M P	151028- 002	58	TRANSISTOR TIP125	Q4,Q6	2		
M P	151030- 001	59	TRANSISTOR 2N3904	Q2,Q3,Q8,Q9	4		
M P	151031- 001	60	TRANSISTOR 2N3906	Q1,Q10	2		
M P	-	61					
M P	-	62					
M P	210708 - 420	63	RIVET-POP	Q4,Q5,Q6,Q7	2		
M P	-	64			2		
M P	100171 - 002	65	TY-RAP 1/16-1 1/4	L1,C6	2		
M P	-	66					
M P	207076- 100	67	ASSEMBLY DRAWING		0		
M P	207076- 200	68	SCHEMATIC		0		
M P	207074- 001	69	PRINTED MASTER		0		
M P	-	70					
M P	-	71					

FORM 795 (R 03/82) (Continuation)

PAGE 4 OF 5

8

7

6

5

4

3

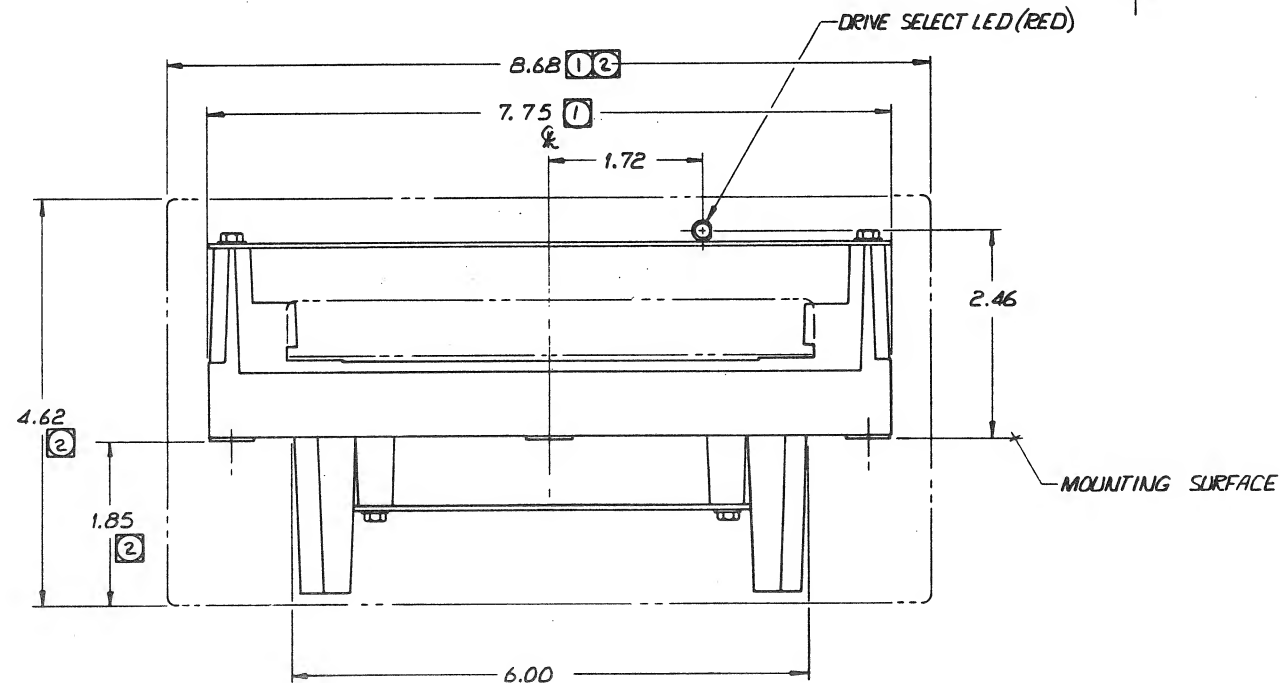
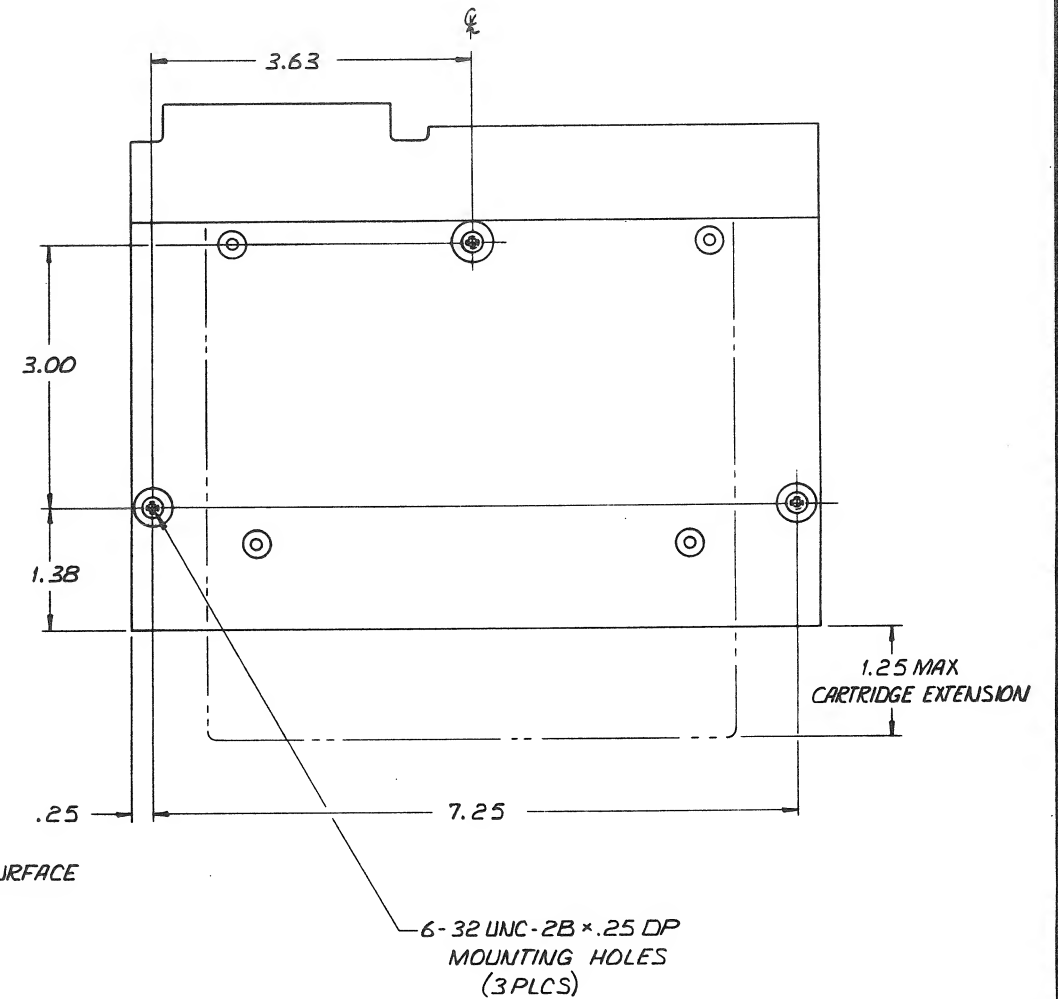
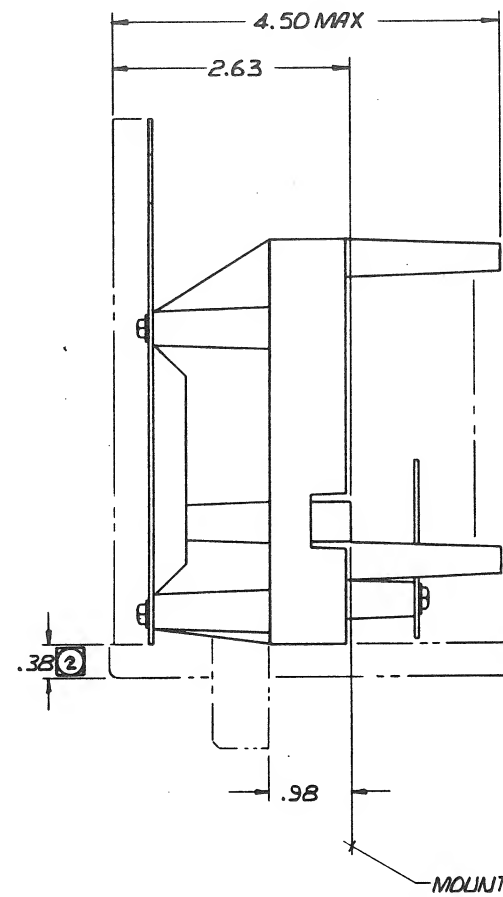
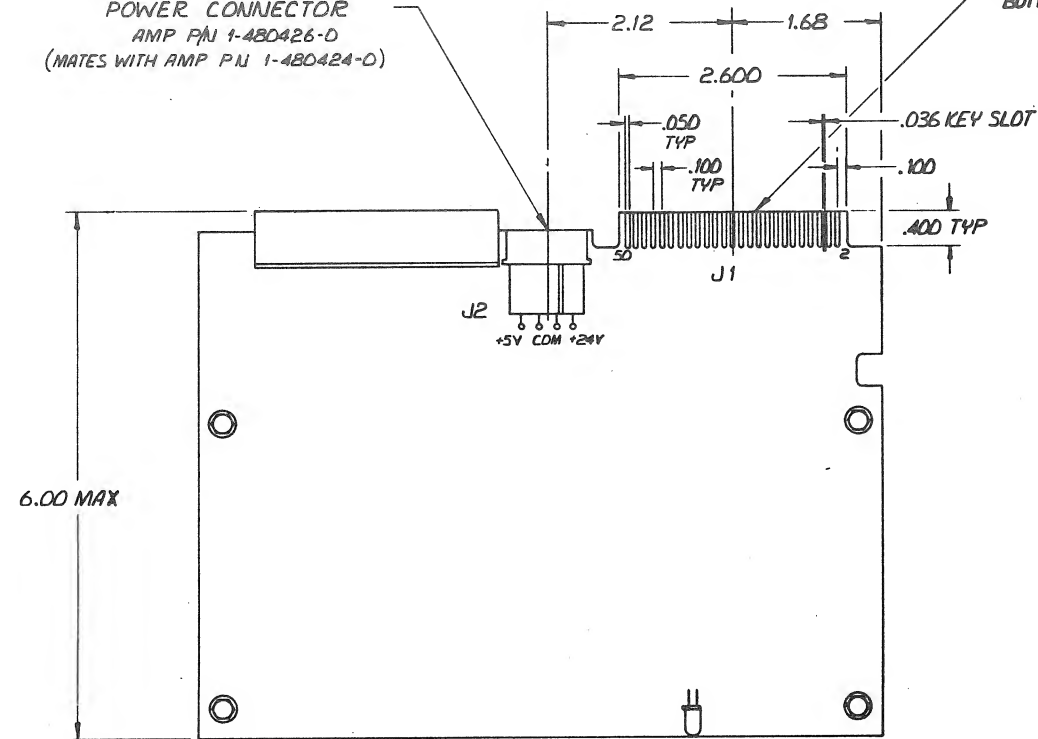
2

1

POWER CONNECTOR
AMP P/N 1-480426-D
(MATES WITH AMP P/N 1-480424-D)

INPUT/OUTPUT CONNECTOR
TOP (COMPONENT) SIDE: EVEN NUMBERED FINGERS
BOTTOM (SOLDER) SIDE: ODD NUMBERED FINGERS
(MATES WITH 3M P/N 3415-0001 OR EQUIV.)

REVISIONS				
REV	DESCRIPTION	CHK	DATE	APPROVED
A	ENG REL	NP	11/28/81	CK 11/30/81
O1	FIL REL ERO 820809	KAM	3/5/82	
O1	ELD 12350	KAM	8/19/84	3/10/84
A	PROD REL ERO 820421/A	From	12/8/84	



PART NUMBER 207302-001

NOTES UNLESS SPECIFIED		DRAWN	MATTHES	8-3-82
1. TOLERANCES .XX±.02 ANGULAR .XXX±.010 ±		CHECK	KAM	8-3-82
2. BREAK ALL SHARP EDGES APPROX. .010		APPR.	<i>Flux</i>	<i>P. 5/8</i>
3. MACH. SURFACES		MATERIAL		
4. ALL DIMS IN INCHES.		FINISH		
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		MODEL NO.	QB	
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.		NEXT ASSY	207350	
		SCALE	1/1	
		SIZE	D	
		DO NOT SCALE THIS DRAWING	CODE IDENT	52485
		SHEET	1 OF 1	

cipher
data products, inc.

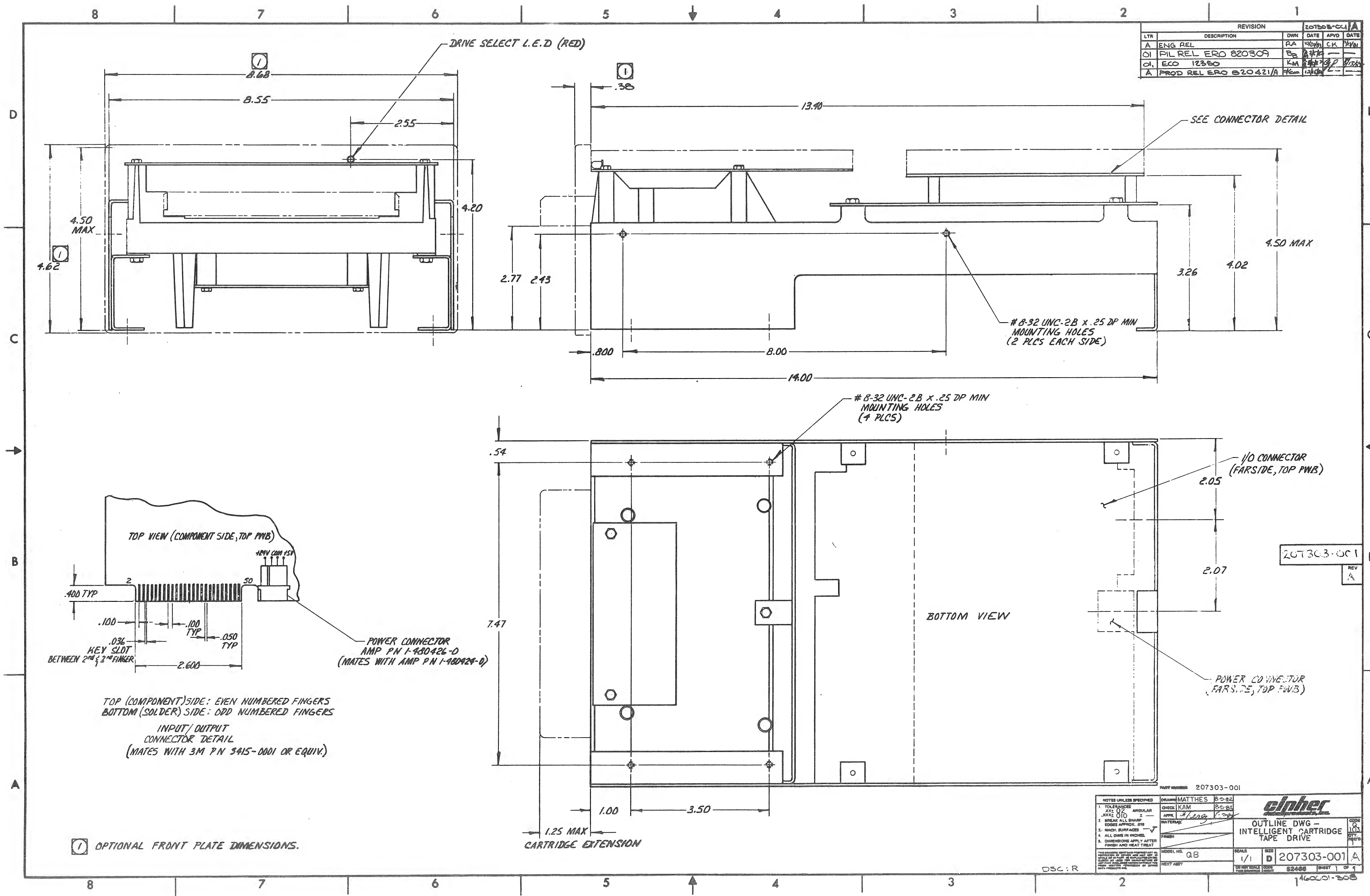
OUTLINE DWG -
BASIC CARTRIDGE
TAPE DRIVE

CODE
Q 103
QTY.
REQ'D
1

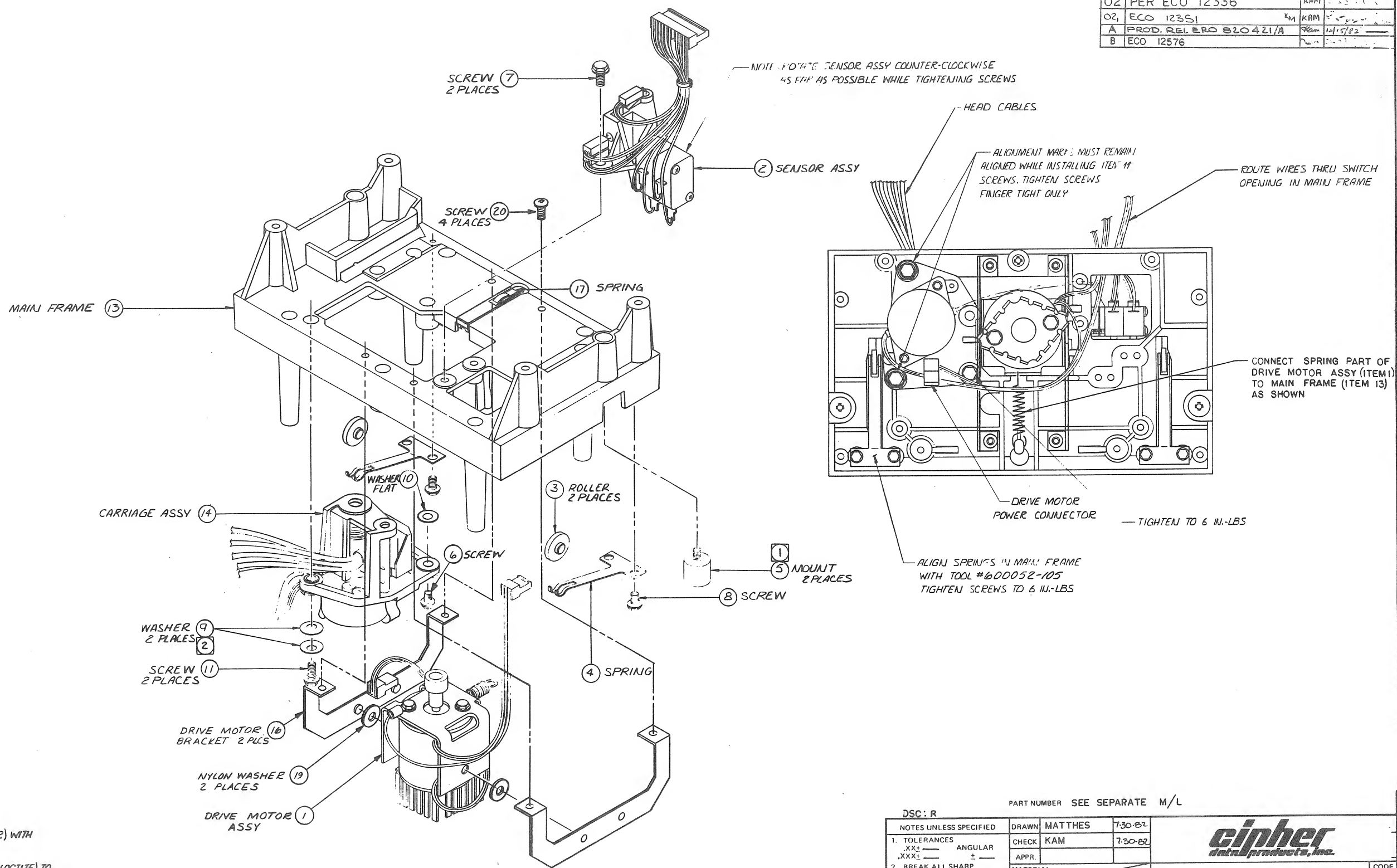
(2) OPTIONAL FRONT PLATE DIMENSIONS
(1) SYMMETRICAL ABOUT C WITHIN .01
NOTES: UNLESS OTHERWISE SPECIFIED

DSC:R

1-460601-307

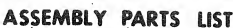


REVISIONS					207304-100	B
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
A	ENG REL	NI	11/4/81	CK	11/4/81	
01	PIL REL ERO 820309	KAM	3/5/82			
02	PER ECO 12336	KAM	3/5/82			
02	ECO 12351	KAM	3/5/82			
A	PROD. REL ERO 820421/A	KAM	11/5/82			
B	ECO 12576					



DSC: R		PART NUMBER SEE SEPARATE M/L				MAIN FRAME ASSY		CODE QTY. REQ'D 1	
NOTES UNLESS SPECIFIED 1. TOLERANCES .XX± — ANGULAR .XXX± — ± — 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		DRAWN: MATTHES 7-30-82 CHECK: KAM 7-30-82 APPR.: MATERIAL: FINISH: MODEL NO.: QB NEXT ASSY: 207358, 207359								SCALE: 1/1 SIZE: D 207304-100 DO NOT SCALE THIS DRAWING		CODE IDENT: 52465 SHEET: 1 OF 1

NOTES: UNLESS OTHERWISE SPECIFIED



ASSEMBLY TITLE	ASSY, MAIN FRAME	DSC: R	DOC CODE Q100
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[illegible]

FORM 798 (R 09/30)

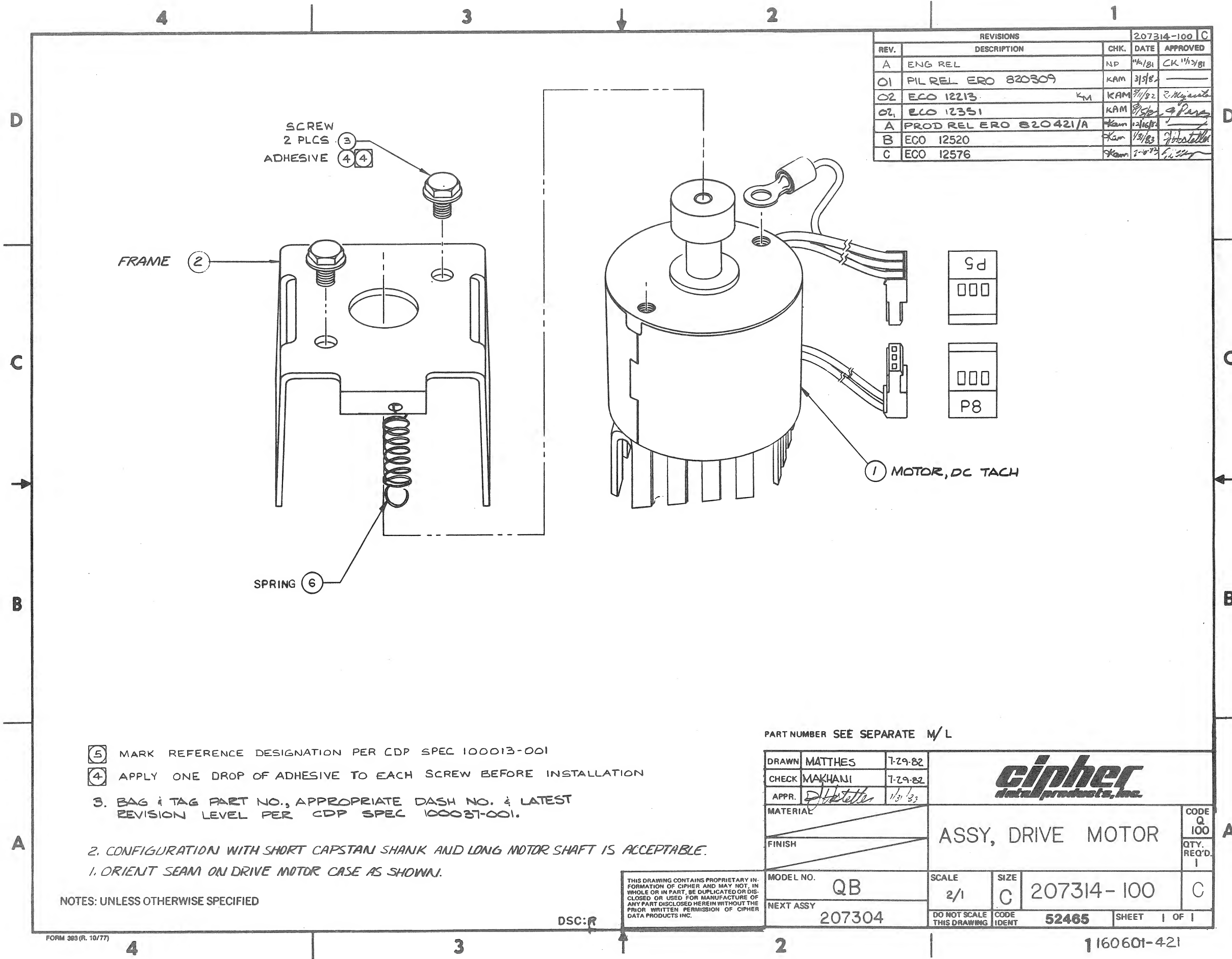
PAGE 1 OF 26



PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	

[illegible]

PAGE 2 OF 2



REVISIONS					207314-100	C
REV.	DESCRIPTION	CHK.	DATE	APPROVED		
A	ENG REL	NP	11/1/81	CK	11/1/81	
01	PIL REL ERO 820309	KAM	3/5/82			
02	ECO 12213	KAM	7/1/82	R. H. H. H.		
02	ECO 12351	KAM	8/5/82	9/1/82		
A	PROD REL ERO 820421/A	KAM	12/1/82			
B	ECO 12520	KAM	1/1/83			
C	ECO 12576	KAM	2-10-83			

- 5 MARK REFERENCE DESIGNATION PER CDP SPEC 100013-001
- 4 APPLY ONE DROP OF ADHESIVE TO EACH SCREW BEFORE INSTALLATION
- 3. BAG & TAG PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

2. CONFIGURATION WITH SHORT CAPSTAN SHANK AND LONG MOTOR SHAFT IS ACCEPTABLE.
1. ORIENT SEAM ON DRIVE MOTOR CASE AS SHOWN.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER SEE SEPARATE M/L

DRAWN	MATTHES	7-29-82			CODE Q 100
CHECK	MAKHANI	7-29-82			
APPR.	<i>Matthes</i>	11/31/83			
MATERIAL				ASSY, DRIVE MOTOR	QTY. REQ'D. 1
FINISH					
MODEL NO.	QB	SCALE 2/1	SIZE C	207314-100	C
NEXT ASSY	207304	DO NOT SCALE THIS DRAWING	CODE IDENT 52465	SHEET 1 OF 1	

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.

DSC:R

FORM 383 (R. 10/77)

1160601-421



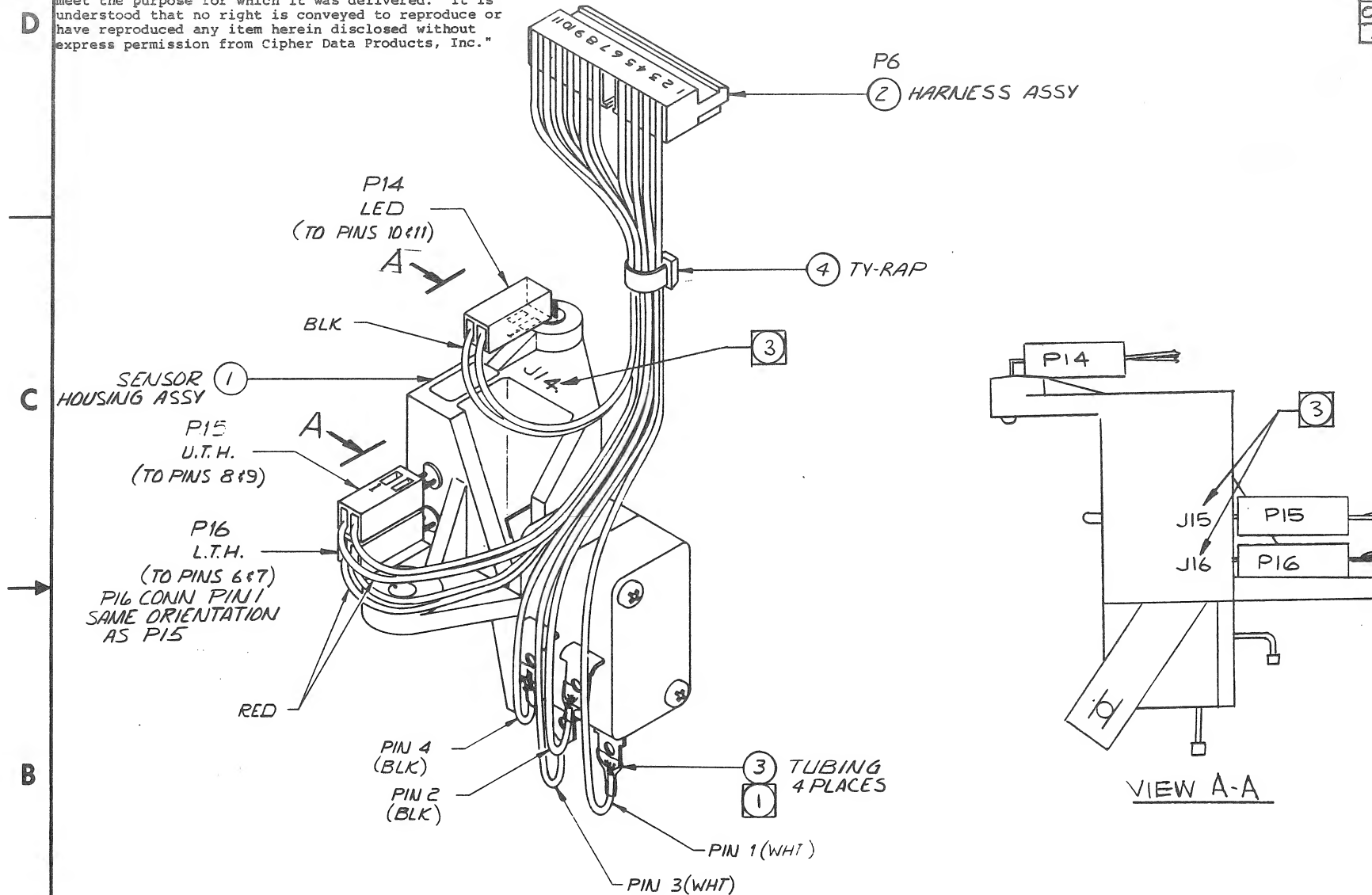
5	92	61
S 7 0 1 1	207314 -001	REV C
ASSEMBLY PARTS NUMBER		

ASSEMBLY TITLE	ASSY, DRIVE MOTOR	DSC:R	DSC CODE Q100
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[illegible]

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REVISIONS					207324-100 A
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
A	ENG REL	ND	11/81	CK 11/83	
01	PIL REL ERO 820309	KAM	3/5/82		
01	ECO 12351	KAM	8/5/82	9/2/82	
02	ECO 12464	KAM	7/2/82	5/2/82	
A	PROD REL ERO 820421/A	KAM	11/82		



- ③ RUBBER STAMP OR STENCIL DESIGNATIONS .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.
2. BAG & TAG PART NO., APPROPRIATE DASH NO & LATEST REVISION LEVEL PER CDP SPEC 100031-001
- ① SOLDER WIRES TO SWITCH, COVER WITH ITEM 3 TUBING.

NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R

PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED	DRAWN	MATTHES	7-29-82			CODE Q 100	
1. TOLERANCES .XX± — ANGULAR .XXX± — ±	CHECK	KAM	7-29-82				SENSOR ASSY
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.							QTY. REQ'D. 1
3. MACH. SURFACES	MATERIAL				SCALE 2/1	SIZE C	207324-100 A
4. ALL DIMS IN INCHES.	FINISH						
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO.	QB			DO NOT SCALE THIS DRAWING	CODE IDENT 52465	SHEET 1 OF 1
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.	NEXT ASSY	207304					

FORM 383 (R. 10/77)

160601-406

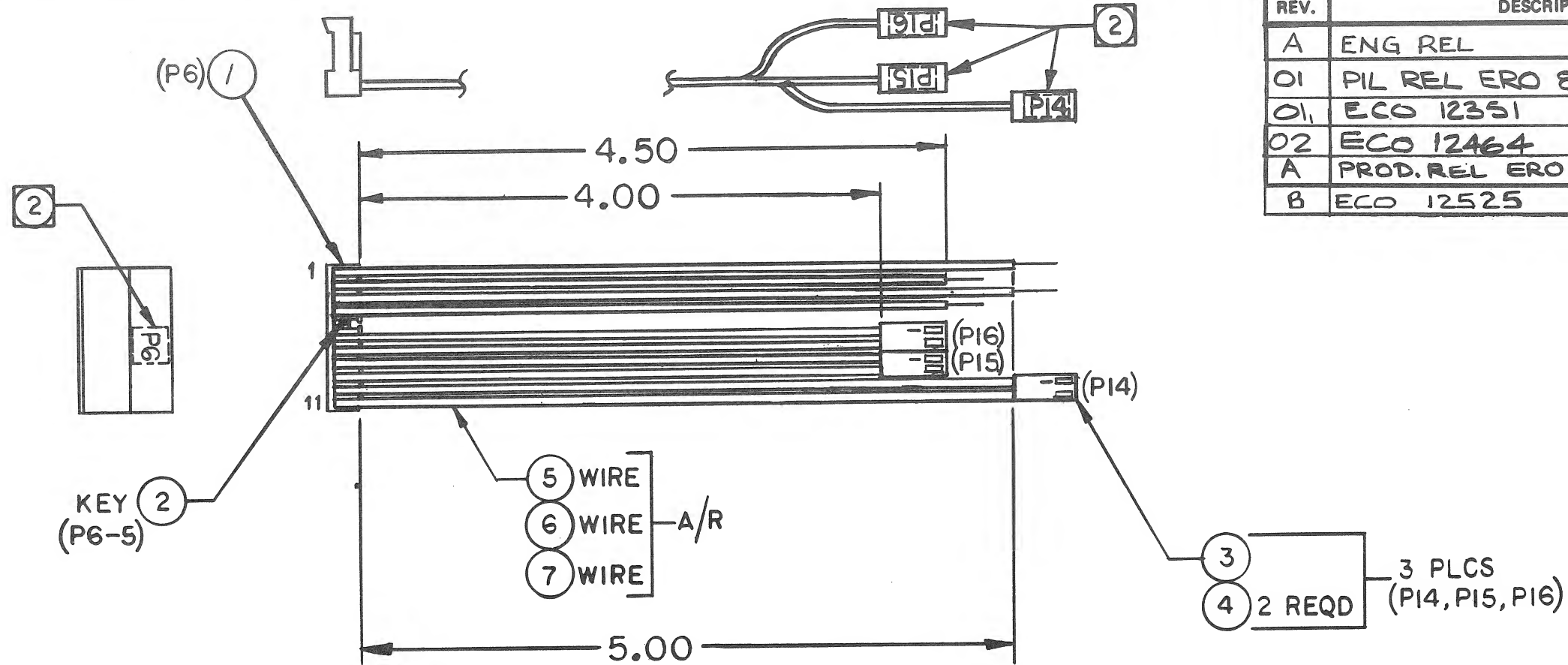


S 7 0 1 1
207324 -001
REV
A

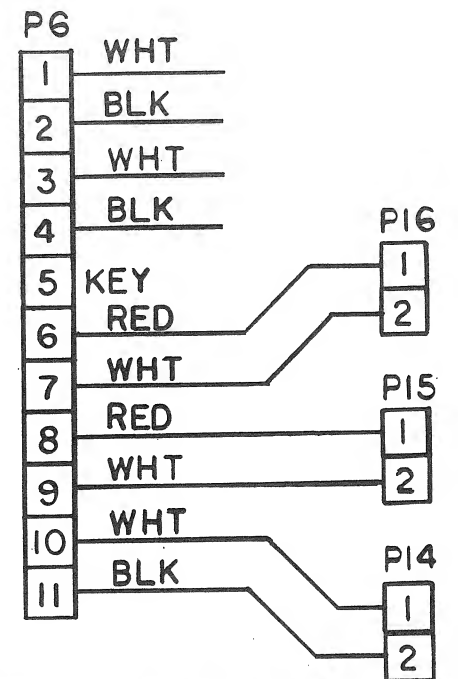
ASSEMBLY PARTS NUMBER

ASSEMBLY TITLE	ASSY, SENSOR	DSC:R	DSC CODE Q100
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[illegible]



REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG REL	NP	11/9/81	CK 11/13/81
01	PIL REL ERO 820309	B8	KAM	3/5/82
01	ECO 12351	KM	KAM	8/5/82 9/8/82
02	ECO 12464	KW	KAM	9/2/82 9/2/82
A	PROD. REL ERO 820421/A	Kam	12/14/82	
B	ECO 12525	Kam	2-3-83	4/1/83



WIRING DIAGRAM

PART NUMBER SEE SEPARATE M/L

2 RUBBER STAMP OR STENCIL DESIGNATIONS .12 HIGH WHITE CHARACTERS PER CDP SPEC 100013-001.

- BAG & TAG PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.

DRAWN	MATTHES	7-29-82			CODE Q 115	
CHECK	KAM	7-29-82				
APPR.	J.K	2-3-83				
MATERIAL			HARNESS ASSY-SENSOR		QTY. REQ'D. 1	
FINISH						
MODEL NO. QB			SCALE 1/1	SIZE B	207326-100	B
NEXT ASSY 207324			DO NOT SCALE THIS DRAWING	CODE IDENT 52465			SHEET 1 OF 1



ASSEMBLY PARTS LIST

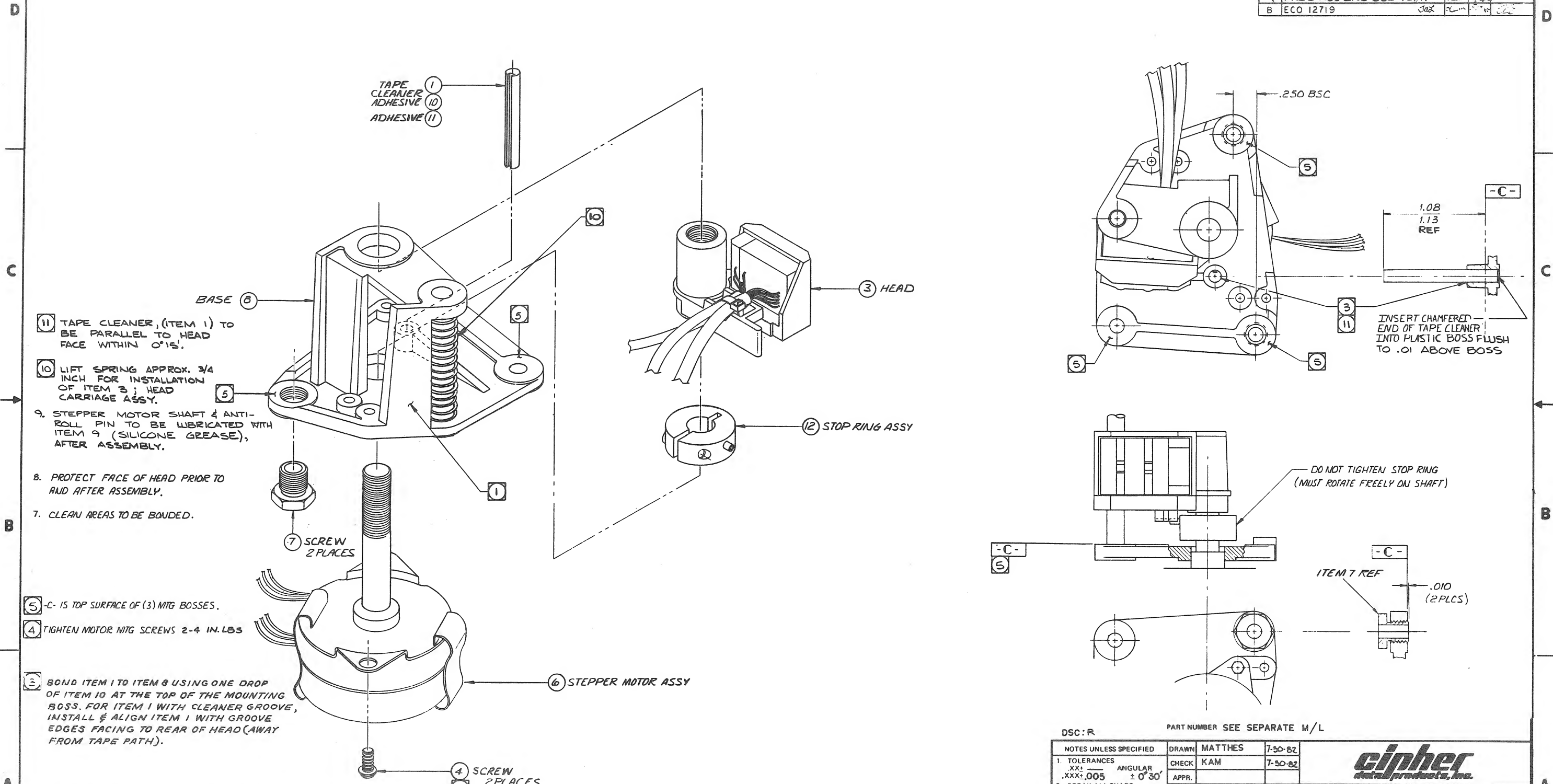
S 7 0 1 1	M P	207326	- 001	REV 6
ASSEMBLY PARTS NUMBER				

ASSEMBLY TITLE	DOC CODE
ASSY, HARNESS - SENSOR	Q115
DSC:R	

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE			
					WHOLE	DECIMAL				
	105081 - 611	1	CONNECTOR, HOUSING	P6	1					
	130006 - 001	2	KEY, CONNECTOR HOUSING		1					
	105082 - 001	3	CONNECTOR, HOUSING	P14,P15,P16	3					
	106017 - 101	4	CONTACT, CRIMP 22-30GA		6					
	100053 - 026	5	WIRE, HOOKUP 26 AWG, BLACK		18		06			
	100053 - 226	6	WIRE, HOOKUP 26 AWG, RED		11		06			
	100053 - 926	7	WIRE, HOOKUP 26 AWG, WHITE		28		06			
	207326 - 100	8	ASSEMBLY DRAWING		0					
	-									
	-									
	-									
	-									
	-									
	-									
	-									

PREPARED BY	Sue Redmond	DATE	1-14-82	REV	A	ECO	12/24/82	DWG REL NO.	820227	DATE	2/1/82
CHECKED BY	J. P. Redmond	DATE	1-26-82	REV	B	ECO	12/24/82	DATE	2/1/82		
DESIGN ENGINEER	J. P. Redmond	DATE	1-29-82	REV	C	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	D	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	E	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	F	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	G	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	H	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	I	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	J	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	K	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	L	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	M	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	N	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	O	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	P	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	Q	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	R	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	S	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	T	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	U	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	V	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	W	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	X	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	Y	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	Z	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	AA	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	AC	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	AN	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	AT	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	AV	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	AW	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	BS	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	BV	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	BW	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	BX	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	BY	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	BZ	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	CA	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	CD	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	CJ	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	CK	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	CL	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	CM	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	CS	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	CX	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	CY	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	CZ	ECO	12/24/82	DATE	2/1/82		
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		DATE		REV	EG	ECO	12/24/82	DATE	2/1/82		
		DATE		REV	EH	ECO	12/24/82	DATE	2/1/82		
		DATE		REV							

REVISIONS				207329-100	B
REV.	DESCRIPTION	CHK.	DATE	APPROVED	
A	ENG REL	NF	7/13/81	LK	7/17/81
01	PIL REL ERO 820309	KAM	7/17/81		
02	ECO 12128	KM	7/17/81		
02	ECO 12351	KAM	7/17/81		
1	PROD REL ERO 820421/A	KAM	7/17/81		
B	ECO 12719	Jad	7/17/81		



11. TAPE CLEANER, (ITEM 1) TO BE PARALLEL TO HEAD FACE WITHIN 0°15'.
10. LIFT SPRING APPROX. 3/4 INCH FOR INSTALLATION OF ITEM 3; HEAD CARRIAGE ASSY.
9. STEPPER MOTOR SHAFT & ANTI-ROLL PIN TO BE LUBRICATED WITH ITEM 9 (SILICONE GREASE), AFTER ASSEMBLY.
8. PROTECT FACE OF HEAD PRIOR TO AND AFTER ASSEMBLY.
7. CLEAN AREAS TO BE BONDED.
5. -C- IS TOP SURFACE OF (3) MTG BOSSES.
4. TIGHTEN MOTOR MTG SCREWS 2-4 IN. LBS
3. BOND ITEM 1 TO ITEM 8 USING ONE DROP OF ITEM 10 AT THE TOP OF THE MOUNTING BOSS. FOR ITEM 1 WITH CLEANER GROOVE, INSTALL & ALIGN ITEM 1 WITH GROOVE EDGES FACING TO REAR OF HEAD (AWAY FROM TAPE PATH).

1. MARK PART NO., APPROPRIATE DASH NO. & LATEST REVISION LEVEL PER CDP SPEC 100037-001

NOTES: UNLESS OTHERWISE SPECIFIED

DSC:R		PART NUMBER SEE SEPARATE M/L				CARRIAGE ASSY	CODE Q 100 QTY. REQ'D 1
NOTES UNLESS SPECIFIED 1. TOLERANCES .XXX±.005 ANGULAR ± 0°30' 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		DRAWN: MATTHES 7-30-82 CHECK: KAM 7-30-82 APPR.: MATERIAL: FINISH:					



ASSEMBLY PARTS LIST

S 7 0 1 1	207329 - 001	B
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ASSEMBLY TITLE	ASSY, CARRIAGE	DSC:R	Q100
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PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207331 - 001	1	TAPE CLEANER		1		
-	2					
207322 - 001	3	ASSY, HEAD/CARRIAGE		1		
145027 - 304	4	SCREW - THREAD CUTTING INDENTED HEX WASHER HEAD	NO. 6-19x1/4	2		
-	5					
207327 - 001	6	ASSY, STEPPER MOTOR		1		
207339 - 001	7	SCREW - ADJUSTMENT		2		
207334 - 001	8	ASSY, CARRIAGE BASE		1		
100409 - 001	9	GREASE, SILICONE	DOW III	A/R		
100465 - 002	10	ADHESIVE		A/R		
100465 - 003	11	ADHESIVE		A/R		
207332 - 001	12	ASSY, STOP RING		1		
207329 - 100	13	ASSEMBLY DRAWING		0		
-						

PREPARED BY	Sue Redmond	DATE	1-15-82	REV	B	12719	1/18 5/1/82
CHECKED BY	J. P. ...	DATE	1-26-82	REV	A	12719	1/18 5/1/82
DESIGN ENGINEER	J. P. ...	DATE	1-29-82	REV	C	12719	1/18 5/1/82
		DATE		REV	D	12719	1/18 5/1/82
		DATE		REV	E	12719	1/18 5/1/82
		DATE		REV	F	12719	1/18 5/1/82
		DATE		REV	G	12719	1/18 5/1/82
		DATE		REV	H	12719	1/18 5/1/82
		DATE		REV	I	12719	1/18 5/1/82
		DATE		REV	J	12719	1/18 5/1/82
		DATE		REV	K	12719	1/18 5/1/82
		DATE		REV	L	12719	1/18 5/1/82
		DATE		REV	M	12719	1/18 5/1/82
		DATE		REV	N	12719	1/18 5/1/82
		DATE		REV	O	12719	1/18 5/1/82
		DATE		REV	P	12719	1/18 5/1/82
		DATE		REV	Q	12719	1/18 5/1/82
		DATE		REV	R	12719	1/18 5/1/82
		DATE		REV	S	12719	1/18 5/1/82
		DATE		REV	T	12719	1/18 5/1/82
		DATE		REV	U	12719	1/18 5/1/82
		DATE		REV	V	12719	1/18 5/1/82
		DATE		REV	W	12719	1/18 5/1/82
		DATE		REV	X	12719	1/18 5/1/82
		DATE		REV	Y	12719	1/18 5/1/82
		DATE		REV	Z	12719	1/18 5/1/82
		DATE		REV	AA	12719	1/18 5/1/82
		DATE		REV	AB	12719	1/18 5/1/82
		DATE		REV	AC	12719	1/18 5/1/82
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		DATE		REV	AJ	12719	1/18 5/1/82
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		DATE		REV	AM	12719	1/18 5/1/82
		DATE		REV	AN	12719	1/18 5/1/82
		DATE		REV	AO	12719	1/18 5/1/82
		DATE		REV	AP	12719	1/18 5/1/82
		DATE		REV	AQ	12719	1/18 5/1/82
		DATE		REV	AR	12719	1/18 5/1/82
		DATE		REV	AS	12719	1/18 5/1/82
		DATE		REV	AT	12719	1/18 5/1/82
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		DATE		REV	AW	12719	1/18 5/1/82
		DATE		REV	AX	12719	1/18 5/1/82
		DATE		REV	AY	12719	1/18 5/1/82
		DATE		REV	AZ	12719	1/18 5/1/82
		DATE		REV	BA	12719	1/18 5/1/82
		DATE		REV	BB	12719	1/18 5/1/82
		DATE		REV	BC	12719	1/18 5/1/82
		DATE		REV	BD	12719	1/18 5/1/82
		DATE		REV	BE	12719	1/18 5/1/82
		DATE		REV	BF	12719	1/18 5/1/82
		DATE		REV	BG	12719	1/18 5/1/82
		DATE		REV	BH	12719	1/18 5/1/82
		DATE		REV	BI	12719	1/18 5/1/82
		DATE		REV	BJ	12719	1/18 5/1/82
		DATE		REV	BK	12719	1/18 5/1/82
		DATE		REV	BL	12719	1/18 5/1/82
		DATE		REV	BM	12719	1/18 5/1/82
		DATE		REV	BN	12719	1/18 5/1/82
		DATE		REV	BO	12719	1/18 5/1/82
		DATE		REV	BP	12719	1/18 5/1/82
		DATE		REV	BQ	12719	1/18 5/1/82
		DATE		REV	BR	12719	1/18 5/1/82
		DATE		REV	BS	12719	1/18 5/1/82
		DATE		REV	BT	12719	1/18 5/1/82
		DATE		REV	BU	12719	1/18 5/1/82
		DATE		REV	BV	12719	1/18 5/1/82
		DATE		REV	BW	12719	1/18 5/1/82
		DATE		REV	BX	12719	1/18 5/1/82
		DATE		REV	BY	12719	1/18 5/1/82
		DATE		REV	BZ	12719	1/18 5/1/82
		DATE		REV	CA	12719	1/18 5/1/82
		DATE		REV	CB	12719	1/18 5/1/82
		DATE		REV	CC	12719	1/18 5/1/82
		DATE		REV	CD	12719	1/18 5/1/82
		DATE		REV	CE	12719	1/18 5/1/82
		DATE		REV	CF	12719	1/18 5/1/82
		DATE		REV	CG	12719	1/18 5/1/82
		DATE		REV	CH	12719	1/18 5/1/82
		DATE		REV	CI	12719	1/18 5/1/82
		DATE		REV	CJ	12719	1/18 5/1/82
		DATE		REV	CK	12719	1/18 5/1/82
		DATE		REV	CL	12719	1/18 5/1/82
		DATE		REV	CM	12719	1/18 5/1/82
		DATE		REV	CN	12719	1/18 5/1/82
		DATE		REV	CO	12719	1/18 5/1/82
		DATE		REV	CP	12719	1/18 5/1/82
		DATE		REV	CQ	12719	1/18 5/1/82
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		DATE		REV	CS	12719	1/18 5/1/82
		DATE		REV	CT	12719	1/18 5/1/82
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		DATE		REV	CV	12719	1/18 5/1/82
		DATE		REV	CW	12719	1/18 5/1/82
		DATE		REV	CX	12719	1/18 5/1/82
		DATE		REV	CY	12719	1/18 5/1/82
		DATE		REV	CZ	12719	1/18 5/1/82
		DATE		REV	DA	12719	1/18 5/1/82
		DATE		REV	DB	12719	1/18 5/1/82
		DATE		REV	DC	12719	1/18 5/1/82
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		DATE		REV	DI	12719	1/18 5/1/82
		DATE		REV	DJ	12719	1/18 5/1/82
		DATE		REV	DK	12719	1/18 5/1/82
		DATE		REV	DL	12719	1/18 5/1/82
		DATE		REV	DM	12719	1/18 5/1/82
		DATE		REV	DN	12719	1/18 5/1/82
		DATE		REV	DO	12719	1/18 5/1/82
		DATE		REV	DP	12719	1/18 5/1/82
		DATE		REV	DQ	12719	1/18 5/1/82
		DATE		REV	DR	12719	1/18 5/1/82
		DATE		REV	DS	12719	1/18 5/1/82
		DATE		REV	DT	12719	1/18 5/1/82
		DATE		REV	DU	12719	1/18 5/1/82
		DATE		REV	DV	12719	1/18 5/1/82
		DATE		REV	DW	12719	1/18 5/1/82
		DATE		REV	DX	12719	1/18 5/1/82
		DATE		REV	DY	12719	1/18 5/1/82
		DATE		REV	DZ	12719	1/18 5/1/82
		DATE		REV	EA	12719	1/18 5/1/82
		DATE		REV	EB	12719	1/18 5/1/82
		DATE		REV	EC	12719	1/18 5/1/82
		DATE		REV	ED	12719	1/18 5/1/82
		DATE		REV	EE	12719	1/18 5/1/82
		DATE		REV	EF	12719	1/18 5/1/82
		DATE		REV	EG	12719	1/18 5/1/82
		DATE		REV	EH	12719	1/18 5/1/82
		DATE		REV	EI	12719	1/18 5/1/82
		DATE		REV	EJ	12719	1/18 5/1/82
		DATE		REV	EK	12719	1/18 5/1/82
		DATE		REV	EL	12719	1/18 5/1/82
		DATE		REV	EM	12719	1/18 5/1/82
		DATE		REV	EN	12719	1/18 5/1/82
		DATE		REV	EO	12719	1/18 5/1/82
		DATE		REV	EP	12719	1/18 5/1/82
		DATE		REV	EQ	12719	1/18 5/1/82
		DATE		REV	ER	12719	1/18 5/1/82
		DATE		REV	ES	12719	1/18 5/1/82
		DATE		REV	ET	12719	1/18 5/1/82
		DATE		REV	EU	12719	1/18 5/1/82
		DATE		REV	EV	12719	1/18 5/1/82
		DATE		REV	EW	12719	1/18 5/1/82
		DATE		REV	EX	12719	1/18 5/1/82
		DATE		REV	EY	12719	1/18 5/1/82
		DATE		REV	EZ	12719	1/18 5/1/82
		DATE		REV	FA	12719	1/18 5/1/82
		DATE		REV	FB	12719	1/18 5/1/82
		DATE		REV	FC	12719	1/18 5/1/82
		DATE		REV	FD	12719	1/18 5/1/82
		DATE		REV	FE	12719	1/18 5/1/82
		DATE		REV	FF	12719	1/18 5/1/82
		DATE		REV	FG	12719	1/18 5/1/82
		DATE		REV	FH	12719	1/18 5/1/82
		DATE		REV	FI	12719	1/18 5/1/82
		DATE		REV	FJ	12719	1/18 5/1/82
		DATE		REV	FK	12719	1/18 5/1/82
		DATE		REV	FL	12719	1/18 5/1/82
		DATE		REV	FM	12719	1/18 5/1/82
		DATE		REV	FN	12719	1/18 5/1/82
		DATE		REV	FO	12719	1/18 5/1/82
		DATE		REV	FP	12719	1/18 5/1/82
		DATE		REV	FQ	12719	1/18 5/1/82
		DATE		REV	FR	12719	1/18 5/1/82
		DATE		REV	FS	12719	1/18 5/1/82
		DATE		REV	FT	12719	1/18 5/1/82
		DATE		REV	FU	12719	1/18 5/1/82
		DATE		REV	FV	12719	1/18 5/1/82
		DATE		REV	FW	12719	1/18 5/1/82
		DATE		REV	FX	12719	1/18 5/1/82
		DATE		REV	FY	12719	1/18 5/1/82
		DATE		REV	FZ	12719	1/18 5/1/82
		DATE		REV	GA	12719	1/18 5/1/82
		DATE		REV	GB	12719	1/18 5/1/82
		DATE		REV	GC	12719	1/18 5/1/82
		DATE		REV	GD	12719	1/18 5/1/82
		DATE		REV	GE	12719	1/18 5/1/82
		DATE		REV	GF	12719	1/18 5/1/82
</							

REVISIONS					207350-100
REV	DESCRIPTION	CHK	DATE	APPROVED	
A	ENG REL	NP	11/1/81	CK	11/1/81
O1	PIL REL ERO 820309	KAM	3/5/82		
O2	ECO 12390	KAM	3/5/82		
O3	ECO 12351/A	KAM	3/5/82		
A	PROD. REL. PER ERO 820421/A	KAM	11/1/81		
B	ECO 12653	JAL	3/5/82		
C	ECO 12692	KAM	3/5/82		
D	ECO 12703	KAM	3/5/82		

STANDOFF
(4 REQD)

SPRING & ROLLER
GND CABLE

NAMEPLATE

LABEL

CARTRIDGE TAPE
DR ASSY

BRACKET-MOUNTING, 8" F.D.

PUNCH ALL SHUNTS EXCEPT CENTER ONE
(2B-4 TO 2B-11)

2B

DETAIL A


MOTOR GND CABLE

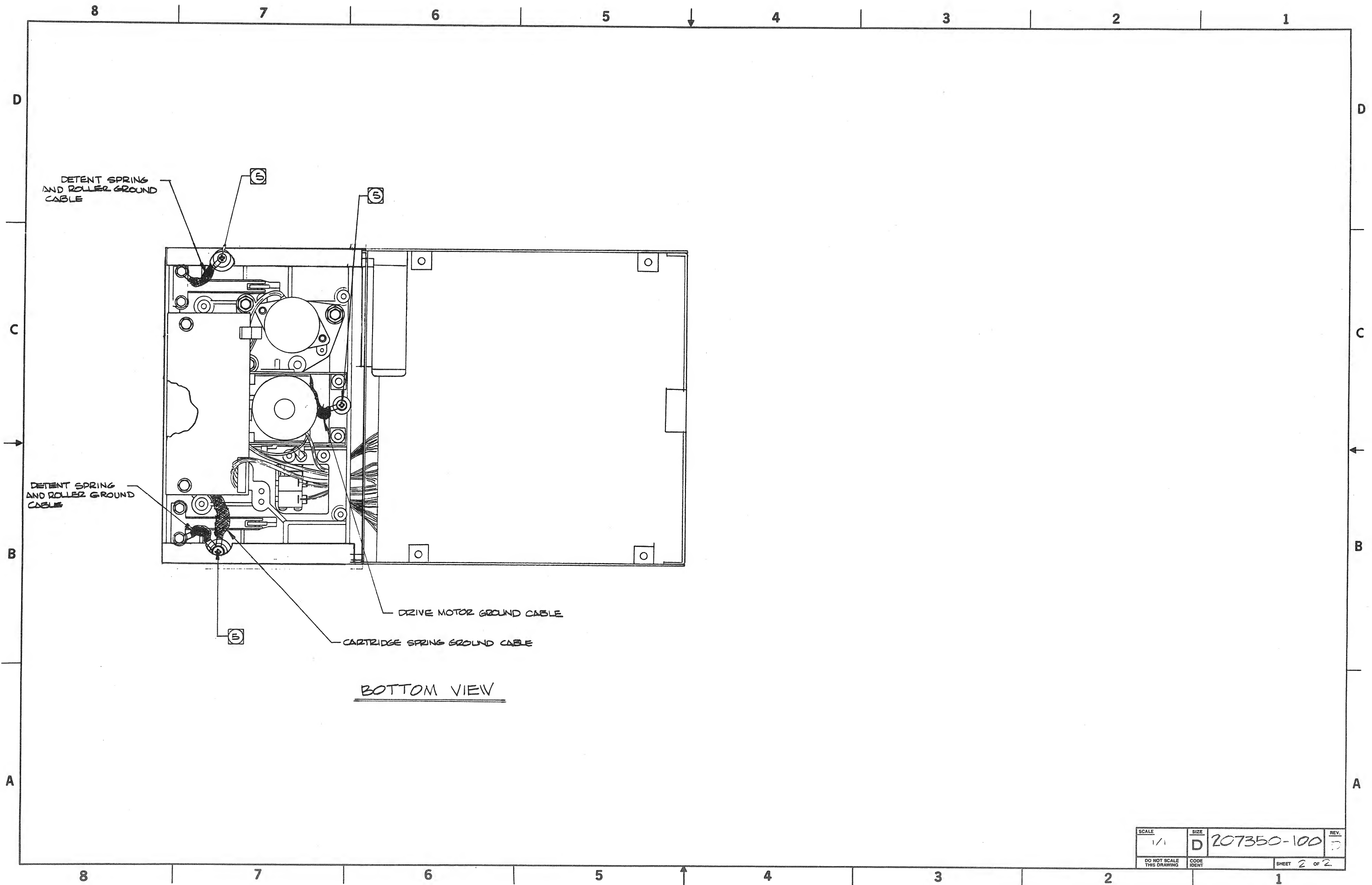
SCREW
(3PLCS)

- 3 ROUTE POWER CABLE BETWEEN CONTROLLER BOARDS.
- 4 BREAK CONTROLLER PWB (ITEM 4) AT SLOTS BETWEEN P4 & P5 CABLES. CUT OFF EXCESS TABS AND MOUNT SMALLER HALF ONTO (5) PLASTIC SUPPORT POSTS ON LARGER HALF.
- 1 STAMP FINAL ASSY P/N & REV ON SURFACE INDICATED.

NOTES: UNLESS OTHERWISE SPECIFIED


DSC: R PART NUMBER SEE SEPARATE M/L

NOTES UNLESS SPECIFIED 1. TOLERANCES .XX± — ANGULAR .XXX± — ± 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT THIS DRAWING CONTAINS PROPRIETARY IN- FORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DIS- CLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS, INC.	DRAWN	MATTHES	7-29-82			CODE Q 101
	CHECK	KAM	7-29-82			
	APPR.			MTT-F420 PICTORIAL		QTY. REQ'D 1
	MATERIAL					
	FINISH			MODEL NO.	QB	SCALE 1/1
		NEXT ASSY		SIZE	D	207350-100
				DO NOT SCALE THIS DRAWING	CODE IDENT	52465
				SHEET	1	OF 2



		ASSEMBLY PARTS LIST		<div style="display: flex; justify-content: space-between;"> S 7 0 1 1 207350 --001 REV D </div>				
ASSEMBLY TITLE				ASSEMBLY PARTS NUMBER				
MTT-F420, 30 IPS, 4 TK				DSC: R				
ASSEMBLY TITLE				DOC CODE				
MTT-F420, 30 IPS, 4 TK				Q101				
19	PART NUMBER	20	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
						WHOLE 12	DECIMAL 18	
	207020 - 001	1		ASSY, CABLE		1		
	145026 - 303	2		SCREW, WASHER HD HEX, INDENTED 6-32 x 3/16		3		
	207341 - 002	3		NAMEPLATE, QUARTERBACK TAPE DRIVE		1		
	207005 - 001	4		ASSY, PWB - CONTROLLER		1		
	940075 - 001	5		BRACKET, MOUNTING 8" F.D.		1		
	207359 - 003	6		ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS		1		
	147805 - 002	7		STANDOFF-LK. CKT. BD. SUP	3/8" Long	4		
	100472 - 001	8		SHIPPING BAG, PLASTIC - 16 X 14		1		
	950035 - 001	9		SHIPPING CARTON, OUTER BOX		1		
	950036 - 001	10		SHIPPING CARTON, INNER FOLD		1		
	207366 - 001	11		PRODUCT SPEC, QUARTERBACK STREAMING CARTRIDGE TP DR		0		
	207350 - 100	12		MTT-F420, PICTORIAL		0		
	940012 - 101	13		LABEL, QUARTERBACK		1		
	-							

[illegible]

		<h1 style="margin: 0;">ASSEMBLY PARTS LIST</h1>		<div style="display: flex; justify-content: space-between;"> S 7 0 1 1 207350 — 002 REV D </div>		
ASSEMBLY TITLE		MTT-F420, 90 IPS, 4 TK		<div style="display: flex; justify-content: space-between;"> OSC:R OSC CODE 9101 </div>		
PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
				WHOLE	DECIMAL	
207020 — 001	1	ASSY, CABLE		1		
145026 — 303	2	SCREW, WASHER HD HEX INDENTED 6-32 X 3/16		2		
207341 — 002	3	NAMEPLATE, QUARTERBACK TAPS DRIVE		1		
207005 — 002	4	ASSY, PWB - CONTROLLER		1		
940075 — 001	5	BRACKET, MOUNTING 8" F.D.		1		
207358 — 003	6	ASSY, CARTRIDGE TAPE DRIVE Q420, 90 IPS		1		
147805 — 002	7	STANDOFF-LK. CKT. BD. SUP	3/8" LONG	1		
100472 — 001	8	SHIPPING BAG, PLASTIC - 16 X 14		1		
950035 — 001	9	SHIPPING CARTON, OUTER BOX		1		
950036 — 001	10	SHIPPING CARTON, INNER FOLD		1		
207366 — 001	11	PRODUCT SPEC, QUARTERBACK STREAMING CARTRIDGE TP DR		0		
207350 — 100	12	MTT-F420, PICTORIAL		0		
940012 — 101	13	LABEL, QUARTERBACK		1		
—						
PREPARED BY	Sue Redmond	DATE	1-20-82			
CHECKED BY	1/18/82		1-26-82			
DESIGN ENGINEER	1/18/82		1-29-82			
OWG REL. NO.	DATE					
820287	2 1 82					
NEXT ASSEMBLY						
M M D D Y Y						
REV	ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE	
		D 12712 1/18/82				
		C 12692 1/18/82				
MODEL NO.						
F420-90						

FORM 755 (9/58/82)

PAGE 1 OF 2

[illegible]

elpher
Electronics Division

Garden Grove Division

ASSEMBLY PARTS LIST

ASSEMBLY TITLE:

MTT-F420, 30 IPS, 4 TK

DSC:R

DSC CODE:

Q101

S 7 0 1 1

M.P.

207350 — 005

ASSEMBLY PART NUMBER

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
	207020 — 001	1	ASSY, CABLE		1		
	145026 — 303	2	SCREW, WASHER HD HEX, INDENTED 6-32 x 3/16		3		
	207341 — 005	3	NAMEPLATE, QUARTERBACK TAPE DRIVE		1		
	207005 — 001	4	ASSY, PMB - CONTROLLER		1		
	940075 — 001	5	BRACKET, MOUNTING 8" F.D.		1		
	207359 — 004	6	ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS		1		
	147805 — 002	7	STANDOFF-LK. CKT. BD. SUP	3/8" LONG	4		
	100472 — 001	8	SHIPPING BAG, PLASTIC - 16 x 14		1		
	950035 — 001	9	SHIPPING CARTON, OUTER BOX		1		
	950036 — 001	10	SHIPPING CARTON, INNER FOLD		1		
	207366 — 001	11	PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE		0		
	207350 — 100	12	MTT-F420, PICTORIAL		0		
	940012 — 101	13	LABEL, QUARTERBACK		1		
	207305 — 100	15	LABEL INSTRUCTIONS		0		

PREPARED BY	Sue Redmond	DATE	7-9-82	E 12760	9/15/82	DWG REL NO.	9	1	5	8	2	DATE	
CHECKED BY	Tom Mahan	DATE	7/15/82	D 12712	9/15/82		820420						
DESIGN ENGINEER	R. P. K.	DATE	11/11/82	C 12692	9/15/82								
				B 12696	9/15/82								
				PROD	9/15/82								
				A REL	9/15/82								
				REV	ECO								
				DATE / SIGNATURE									
				REV	ECO								
				DATE / SIGNATURE									


NEXT ASSEMBLY

MODEL NO.

F420-30

FORM 795 (R 03/82)

PAGE 1 OF 1



Garden Grove Division

ASSEMBLY PARTS LIST

ASSEMBLY TITLE:

MTT-F420, 90 IPS, 4 TK

DESC: R

DOC CODE:

Q101

1 5 72 61 REV
S 7 0 1 1 M P 207350 — 006 H

PART NUMBER		ITEM NO.	DESCRIPTION	REMARKS	ASSEMBLY PART NUMBER		
					QUANTITY		U.M. CODE
					WHOLE	DECIMAL	
19	207020 — 001	20	1 ASSY, CABLE		1		
19	145026 — 303	2	2 SCREW, WASHER HD HEX INDENTED 6-32 X 3/16		3		
19	207341 — 003	3	3 NAMEPLATE, QUARTERBACK TAPE DRIVE		1		
19	207005 — 002	4	4 ASSY, PWB — CONTROLLER		1		
19	940075 — 001	5	5 BRACKET, MOUNTING 8" F.D.		1		
19	207358 — 004	6	6 ASSY, CARTRIDGE TAPE DRIVE 0420, 90 IPS		1		
19	147805 — 002	7	7 STANDOFF-LK. CKT. BD. SUP	3/8" LONG	4		
19	100472 — 001	8	8 SHIPPING BAG, PLASTIC - 16 X 14		1		
19	950035 — 001	9	9 SHIPPING CARTON, OUTER BOX		1		
19	950036 — 001	10	10 SHIPPING CARTON, INNER FOLD		1		
19	207366 — 001	11	11 PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE		0		
19	207350 — 100	12	12 MTT-F420, PICTORIAL		0		
19	940012 — 101	13	13 LABEL, QUARTERBACK		1		
19	207305 — 100	15	15 MTT-F420 LABEL INSTRUCTIONS		0		
PREPARED BY Sue Redmond CHECKED BY Sam Mahdham DESIGN ENGINEER J. H. Hether					DWG REL NO. DATE 12653 1/3/83 12624 1/10/83 12577 12712 PROD. REL 1/18/83 H 10750 G 12712 = CO-		
DATE 7-9-82 E 12696 D 12653 C 12624 B 12577 A PROD. REL 1/18/83 REV ECD DATE/SIGNATURE					DATE 1/1/83 M M M D D Y Y NEXT ASSEMBLY MODEL NO. F420-90		

FORM 795 (R 03/82)



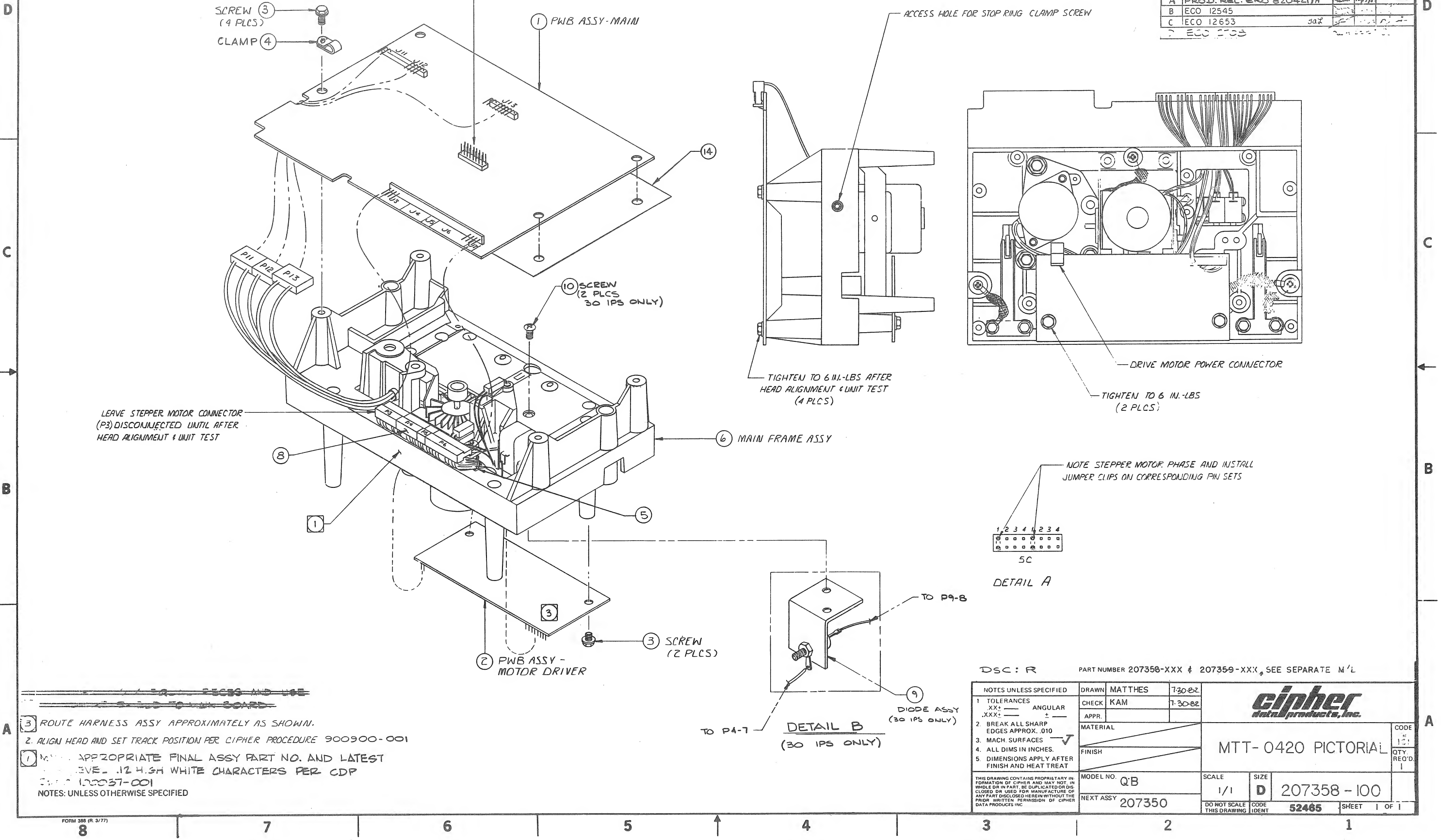
Garden Grove Division

ASSEMBLY PARTS LIST

ASSEMBLY TITLE: MTT-F420, 30 IPS, 4 TK DSC: R DOC CODE: Q101 1 5 02 207350 - 009 61 REV A

19	PART NUMBER	ITEM NO.	DESCRIPTION	REMARKS	QUANTITY			U.M.	CODE
					12	DECIMAL	18		
	207020 — 001	1	ASSY, CABLE		1				
	145026 — 304	2	SCREW, WASHER HD HEX, INDENTED 6-32 X 1/4		3				
	207341 — 008	3	NAMEPLATE, QUARTERBACK TAPE DRIVE		1				
	207005 — 003	4	ASSY, PWB - CONTROLLER		1				
	940075 — 001	5	BRACKET, MOUNTING 8" F.D.		1				
	207359 — 005	6	ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS		1				
	147805 — 002	7	STANDOFF-LK. CKT. BD. SUP.	3/8 LG	4				
	100472 _ 001	8	SHIPPING BAG, PLASTIC-16 X 14		1				
	950035 _ 001	9	SHIPPING CARTON, OUTER BOX		1				
	950036 _ 001	10	SHIPPING CARTON, INNER FOLD		1				
	207366 _ 001	11	PRODUCT SPEC., BASIC QUARTERBACK CARTRIDGE TAPE DRIVE		0				
	207350 — 100	12	MTT-F420, PICTORIAL		0				
	-								
	207305 — 100	15	LABEL INSTRUCTIONS		0				
PREPARED BY	S. HENCKE	DATE	04-18-83					DWG REL NO.	DATE
CHECKED BY	<i>Kam Mahjoub</i>	DATE	4/18/83					820498	4/18/83
DESIGN ENGINEER	<i>G. L. ...</i>	DATE	6/15/83						M M D D Y Y
								NEXT ASSEMBLY	
								MODEL NO.	
		A PROD. REF.	<i>Kam</i>						F420-30
		REV	ECO	DATE / SIGNATURE	REV	ECO	DATE / SIGNATURE		

REVISIONS				
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	ENG REL	NP	7/2/82	CK
01	PIL REL ERO 820309	KAM	7/5/82	
02	ECO 12304	KAM	7/16/82	
02	ECO 12351/A	KAM	7/16/82	
03	ECO 12351/A	KAM	7/16/82	
A	PROD. REL. ERO 820421/A	KAM	12/5/82	
B	ECO 12545			
C	ECO 12653	JaZ		
D	ECO 12703			



- 3 ROUTE HARNESS ASSY APPROXIMATELY AS SHOWN.
2. ALIGN HEAD AND SET TRACK POSITION PER CIPHER PROCEDURE 900900-001
1. MARK APPROPRIATE FINAL ASSY PART NO. AND LATEST REVISION LEVEL IN 1/2 H. SH WHITE CHARACTERS PER CDP 100037-001
- NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R

PART NUMBER 207358-XXX & 207359-XXX, SEE SEPARATE M/L

NOTES UNLESS SPECIFIED	DRAWN	MATTHES	7-30-82
1. TOLERANCES XXX: — ANGULAR XXX: — ±	CHECK	KAM	7-30-82
2. BREAK ALL SHARP EDGES APPROX. .010	APPR.		
3. MACH. SURFACES	MATERIAL		
4. ALL DIMS IN INCHES.	FINISH		
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	MODEL NO.	QB	
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.	NEXT ASSY	207350	

MTT-0420 PICTORIAL		CODE 121
SCALE 1/1	SIZE D	207358-100
DO NOT SCALE THIS DRAWING	CODE IDENT	52465
SHEET 1	OF 1	



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PAGE 1 OF 1PAGE 1 OF 1

PAGE 1 OF 1



PAGE 1 OF 1



PAGE 1 OF 1



1. *Journal of Management Studies*, 1996, 33, 1, 1-14.

Garden Grove Division

ASSEMBLY TITLE:	ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS	DSC:R	DWG CODE: Q101
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1	5	52	61	89V
S 7 0 1 1	M P	207359	- 004	D

PREPARED BY	Sue Redmond	DATE	7-9-82					DWG REL NO.		DATE	
CHECKED BY	Kam Mahkhan	7/14/82	D 12686	5/17/83				820420	9	15	82
DESIGN ENGINEER	L. Baker	11/11/82	C 12653	3/15/83				NEXT ASSEMBLY	M	M	D
			B 670 12553	1/7/83				207350/207351			
			A PROD REL	11/1/82				MODEL NO.			
			REV ECO	DATE / SIGNATURE				F/0420-30			
			REV ECO	DATE / SIGNATURE							

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PAGE 1 OF 1



DSC: R ASSEMBLY PARTS LIST

Garden Green Diol

ASSEMBLY TITLE:	ASSY, CARTRIDGE TAPE DRIVE 0420, 30 IPS	DOC CODE:	Q101
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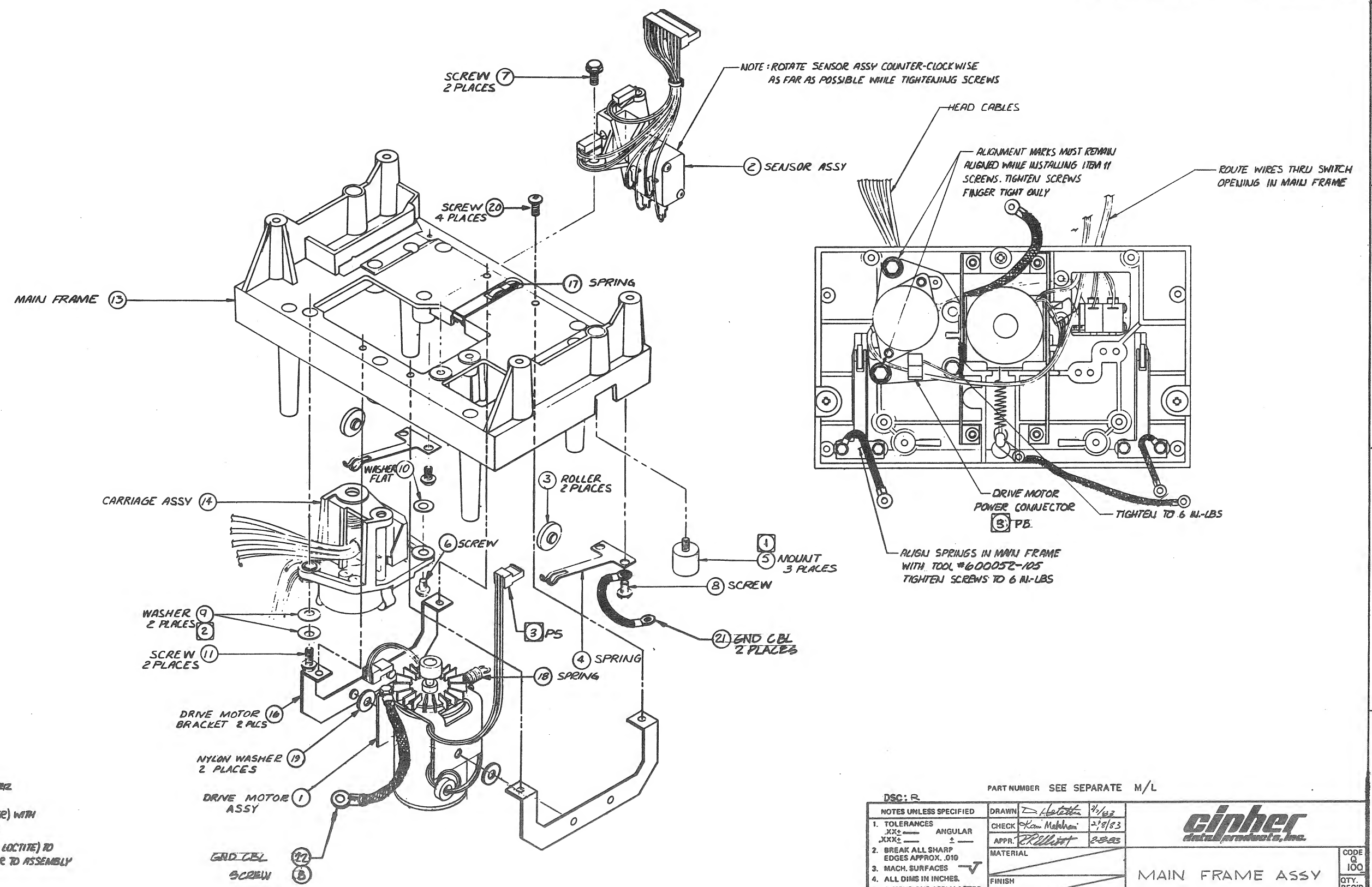
1	5	52	61
S 7 0 1 1	M P	207359 - 005	REV A

[illegible]

Age Group	Percentage of Respondents
18-29	85%
30-49	80%
50-69	75%
70+	70%

1

REVISIONS			
REV.	DESCRIPTION	CHK.	DATE
A	PROD. REL PER BRO 820464	KW	2/8/83
B	ECO 12708	KW	8/8/83



- 3 MARK REFERENCE DESIGNATIONS PER CDP SPEC 100013-001.
- 2 INSTALL ITEMS 9 (BELLEVILLE WASHER) WITH CONCAVE SIDES TOWARD EACH OTHER
- 1 APPLY ONE DROP OF ITEM 12 (GREEN LOCTITE) TO THREADS OF ITEM 5 (SHOCK MOUNT) PRIOR TO ASSEMBLY

NOTES: UNLESS OTHERWISE SPECIFIED

DSC: R		PART NUMBER SEE SEPARATE M/L	
NOTES UNLESS SPECIFIED		DRAWN <i>[Signature]</i> 2/1/83	
1. TOLERANCES XX2 ± XX2 ±		CHECK <i>[Signature]</i> 2/8/83	
2. BREAK ALL SHARP EDGES APPROX. .010		APPR. <i>[Signature]</i> 2/8/83	
3. MACH. SURFACES		MATERIAL	
4. ALL DIMS IN INCHES		FINISH	
5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT		MODEL NO. QB	
THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT BE COPIED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS, INC.		NEXT ASSY 207358, 207359	
		SCALE 1/1	
		SIZE D	
		207393-100	
		DO NOT SCALE THIS DRAWING	
		CODE 52465	
		SHEET 1 OF 1	

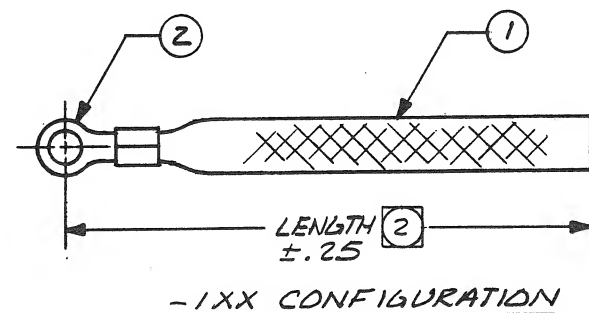
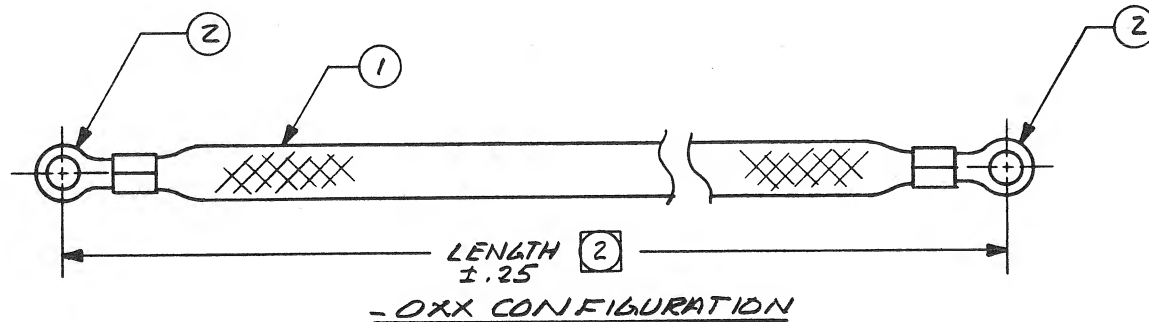
4

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2

1

REVISIONS				207394-100 A
REV.	DESCRIPTION	CHK.	DATE	APPROVED
A	PROD REL PER EEO B20434	CKM	11/2/82	




- 2 LAST TWO DIGITS OF DASH NO. OF CABLE INDICATE CABLE LENGTH IN INCHES (IE. -008 = 8.0 ± .25 INCHES).
1. TAG WITH PART NO., APPROPRIATE DASH NO. & LATEST REV LEVEL PER CDP SPEC 100037-001.

NOTES: UNLESS OTHERWISE SPECIFIED

PART NUMBER

SEE SEPARATE M/L'S

NOTES UNLESS SPECIFIED 1. TOLERANCES .XX± — ANGULAR .XXX± — ± 2. BREAK ALL SHARP EDGES APPROX. .010 3. MACH. SURFACES — J 4. ALL DIMS IN INCHES. 5. DIMENSIONS APPLY AFTER FINISH AND HEAT TREAT	DRAWN D.L. Lott 11/1/82			THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF CIPHER AND MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF ANY PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF CIPHER DATA PRODUCTS INC.
	CHECK [Signature] 11-2-82			
	APPR. [Signature] 11-12-82	MATERIAL		ASSY, CABLE — GROUND STRAP
	FINISH	MODEL No. QB		
	NEXT ASSY 207380 940016, 940017	SCALE 2/1		SIZE C
DSC:R		DO NOT SCALE THIS DRAWING		CODE IDENT 52465
		SHEET 1 OF 1		REV. A

4

3

2

1



ASSEMBLY PARTS LIST

Garden Grove Division		ASSEMBLY TITLE: ASSY, CABLE-GROUND STRAP		DSC: R		DOC CODE: Q115		1 5 12 207394 - 002		REV A	
PREPARED BY S. HENCKE		DATE 03-25-83		DWG REL NO. 820477		DATE 03/30/83		NEXT ASSEMBLY		MODEL NO. F/0420-30/90	
CHECKED BY		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
DESIGN ENGINEER		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
REV		ECO		DATE / SIGNATURE		REV		ECO		DATE / SIGNATURE	

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ASSEMBLY PARTS LIST

Garden Grove Division		ASSEMBLY TITLE: ASSY, CABLE-GROUND STRAP		DSC: R		DOC CODE: Q115		1 5 12 207394 - 003		REV A	
PREPARED BY		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
CHECKED BY		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
DESIGN ENGINEER		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
REV		ECO		DATE / SIGNATURE		REV		ECO		DATE / SIGNATURE	

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ASSEMBLY PARTS LIST

Garden Grove Division		ASSEMBLY TITLE: ASSY, CABLE-GROUND STRAP		DSC: R		DOC CODE: Q115		1 5 12 207394 - 008		REV A	
PREPARED BY		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
CHECKED BY		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
DESIGN ENGINEER		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
REV		ECO		DATE / SIGNATURE		REV		ECO		DATE / SIGNATURE	

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ASSEMBLY PARTS LIST

Garden Grove Division		ASSEMBLY TITLE: ASSY, CABLE-GROUND STRAP		DSC: R		DOC CODE: Q115		1 5 12 207394 - 104		REV A	
PREPARED BY		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
CHECKED BY		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
DESIGN ENGINEER		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
REV		ECO		DATE / SIGNATURE		REV		ECO		DATE / SIGNATURE	

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ASSEMBLY PARTS LIST

Garden Grove Division		ASSEMBLY TITLE: ASSY, CABLE-GROUND STRAP		DSC: R		DOC CODE: Q115		1 5 12 207394 - 105		REV A	
PREPARED BY		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
CHECKED BY		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
DESIGN ENGINEER		DATE		DWG REL NO.		DATE		NEXT ASSEMBLY		MODEL NO.	
REV		ECO		DATE / SIGNATURE		REV		ECO		DATE / SIGNATURE	

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SECTION 3

MASTER PARTS LIST

3.1 RECOMMENDATIONS

The recommended parts for the Cipher Quarterback Tape Drive are listed in the Master Parts List.

3.2 COMPONENT VARIANCE

For resistors, capacitors, small hardware, and other items not included in the list, equivalents in type, value, size, tolerance, and quality may be substituted.

3.3 INTEGRATED CIRCUIT

For integrated circuit where the manufacture is not specifically listed any manufacturer's device of the specific type may be used.

TABLE 3-I

MASTER PARTS LIST	
Assembly, Main PWB - 30 ips R/B 207066-003	207002-001
Assembly, Main PWB - 90 Ips R/B 207066-004	207002-002
Assembly, Controller PWB	207005-001
Assembly, Controller PWB	207005-002
Assembly, Microcomputer Expander PWB	207011-001
Assembly, Motor Driver PWB R/B 207076-001	207017-001
Assembly, Cable - Motor Driver PWB R/B 207073-001	207018-001
Assembly, Cable	207020-001
Assembly, Cable	207020-002
Assembly, Cable	207020-003
Assembly, Cable	207020-004
Assembly, Power Cable - Controller PWB	207021-001
Assembly, 32 x 8 PROM (Read Decode)	207024-001
Assembly, 32 x 8 PROM (Write Decode)	207025-001
Assembly, 256 x 4 Write Sequencer	207026-001
Assembly, 256 x 4 Host Sequencer	207027-001
Assembly, 2K x 8 PROM	207028-001
Assembly, 512 x 4 Read Sequencer	207029-001
Assembly, 8 Bit Microcomputer R/B 207030-002	207030-001
Assembly, 8 Bit Microcomputer	207030-002
Assembly, 8 Bit Microcomputer - 2K x 8 EPROM	207041-001
Assembly, 8 Bit Microcomputer - 2K x 8 EPROM	207041-002
Assembly, Head -2 Ch. (Erase-Read-Write)	207057-001
Assembly, Main PWB - 30 ips R/B 207066-003	207066-001

TABLE 3-I. (Continued)

Assembly, Main PWB - 90 ips R/B 207066-004	207066-002
Assembly, Main PWB - 30 ips	207066-003
Assembly, Main PWB - 90 ips	207066-004
Assembly, Motor Driver PWB R/B 207076-001	207069-001
Assembly, Cable - Motor Driver PWB R/B 207073-001	207070-001
Assembly, Diode - Slow Speed Motor Kit, 30 ips	207072-001
Assembly, Cable - Motor Driver PWB	207073-001
Assembly, Motor Driver PWB	207076-001
Quarterback Maintenance Manual	207100-001
Quarterback Engr. Drawings	207100-002
Quarterback Theory of Operation	207100-003
Plate, Front	207300-001
Light Pipe	207301-001
Assembly, Main Frame	207304-001
Assembly, Main Frame	207304-002
Spring, Detent	207308-001
Frame, Main	207311-001
Frame, Main - Molded	207312-001
Assembly, Drive Motor (Spare)	207314-001
Frame, Drive Motor	207315-001
Heatsink, Zener Diode	207318-001
Capstan R/B 207389-001	207320-001
Assembly, Head/Carriage	207322-001
Housing, Sensor	207323-001
Assembly, Sensor (Spare)	207324-001
Assembly, Sensor Housing	207325-001
Assembly, Sensor Harness	207326-001
Assembly, Stepper Motor	207327-001
Assembly, Stepper Motor - Terminated	207328-001
Assembly, Carriage (Spare)	207329-001
Assembly, Carriage and Nut	207330-001
Assembly, Stop Ring	207332-001
Assembly, Carriage Base	207334-001
Assembly, Carriage Base	207335-001
Assembly, Carriage Base - Molded	207336-001
Shaft, Carriage Drive - ACME	207337-001
Shield, Cable	207338-001
Screw, Adjustment	207339-001
Certified Tape Cartridge - 450 ft.	207340-001
Nameplate - QB Tape Drive	207341-001
Kit, Front Panel	207346-001
Assembly, MTT F420 - 30 ips/4TK	207350-001
Assembly, MTT F420 - 90 ips/4TK	207350-002
Assembly, MTT F420 - 30 ips/4TK	207350-005
Assembly, MTT F420 - 90 ips/4TK	207350-006
Assembly, MTT F420 - 30 ips/4TK	207350-009
Assembly, MTT F420 - 30 ips/4TK	207350-010
Assembly, MTT F420 - 90 ips/4TK	207350-011
Assembly, MTT F420 - 30 ips/4TK	207350-012

TABLE 3-1. (Continued)

Assembly, MTT F420 - 30 ips/4TK	207351-001
Assembly, MTT F420 - 90 ips/4TK	207351-002
Assembly, MTT F420 - 30 ips/4TK	207351-005
Assembly, MTT F420 - 90 ips/4TK	207351-006
Assembly, MTT F420 - 30 ips/4TK	207351-010
Assembly, MTT F420 - 90 ips/4TK	207351-011
Assembly, Cartridge Drive 0420 - 90 ips	207358-002
Assembly, Cartridge Drive 0420 - 90 ips	207358-003
Assembly, Cartridge Drive 0420 - 90 ips	207358-004
Assembly, Cartridge Drive 0420 - 90 ips	207358-005
Assembly, Cartridge Drive 0420 - 30 ips	207359-002
Assembly, Cartridge Drive 0420 - 30 ips	207359-003
Assembly, Cartridge Drive 0420 - 30 ips	207359-004
Assembly, Cartridge Drive 0420 - 30 ips	207359-005
Motor, Stepper	207360-001
Motor, DC, Tach R/B207385-001	207362-001
Drive Nut, Carriage	207363-001
Spring, Compression - Carriage	207375-001
Bracket, Drive Motor	207377-001
Nameplate - Cipher Data Products Logo	207378-001
Cover, Sensor	207381-001
Drive Motor, DC, Tach	207385-001
Frame, Drive Motor	207387-001
Capstan	207389-001
Assembly, Main Frame	207393-001
Assembly, Main Frame	207393-002
Assembly, Ground Strap Cable	207394-002
Assembly, Ground Strap Cable	207394-003
Assembly, Ground Strap Cable	207394-008
Assembly, Ground Strap Cable	207394-104
Assembly, Ground Strap Cable	207394-105
Tracking Tape Cartridge	940049-001
Azimuth Tape Cartridge	940050-001
Bracket, Mounting - 8" F.D.	940075-001
Tape Cartridge Certified by DE I-450 ft.	950125-001



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